

# Robert Akl, D.Sc.

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## Professional Summary

Dr. Akl has over 27 years of industry and academic experience. He is currently a Tenured Associate Professor at the University of North Texas and a Senior Member of IEEE. He has designed, implemented, and optimized both hardware and software aspects of several wireless communication systems for CDMA, Wi-Fi, and sensor networks. Dr. Akl has broad expertise in wireless communication, Bluetooth, CDMA/WCDMA network optimization, GSM, LTE, VoIP, telephony, computer architecture, and computer networks. He is a very active researcher and is well published and cited. He has been awarded many research grants by leading companies in the industry and the National Science Foundation. He has developed and taught over 100 courses in his field. Dr. Akl has received several awards and commendations for his work, including the 2008 IEEE Professionalism Award and was the winner of the 2010 Tech Titan of the Future Award.

Dr. Akl has extensive experience with patents in the wireless and networking industry. In the past ten years, he has worked as a technical expert in dozens of patent related matters, involving thousands of hours of research, investigation, and study. He has repeatedly been qualified as an expert by Courts, and has provided numerous technology tutorials to Courts, and given testimony by deposition and at trial. He has worked with companies large and small, both for and against the validity and infringement of patents, and has also helped counsel and Courts to understand technology that often seems complex. In doing so, he has become familiar with, and actively worked with, the legal principles that underlie patentability and validity and claim interpretation in the wireless and networking industries.

## Areas of Expertise

2G, 3G, 4G, 5G, CDMA/WCDMA, GPS, GSM, UMTS, LTE, Ad-hoc Networks, Antenna Design, Bluetooth, Call Admission Control, Channel Coding, Communication Interfaces and Standards, Compression, Computer Architecture, MIMO Systems, Multi-cell Network Optimization, Network Security, Packet-networks, Telephony, VoIP, Wi-Fi, Wireless Communication, Wireless Sensors.

## Education

<u>Year</u>	<u>College/University</u>	<u>Degree</u>	<u>GPA</u>
2000	Washington University in Saint Louis	D.Sc. in Electrical Engineering	4.0 / 4.0
1996	Washington University in Saint Louis	M.Sc. in Electrical Engineering	4.0 / 4.0
1994	Washington University in Saint Louis	B.Sc. in Electrical Engineering	4.0 / 4.0
1994	Washington University in Saint Louis	B.Sc. in Computer Science	4.0 / 4.0

Graduated *summa cum laude* and ranked first in undergraduate class.

Dissertation: “Cell Design to Maximize Capacity in Cellular Code Division Multiple Access (CDMA) Networks.” Advisors: Dr. Manju Hegde and Dr. Paul Min.

## **Litigation Support and Expert Witness Experience**

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| L1. | 2022     | <b>Finnegan Henderson Farabow Garrett &amp; Dunner LLP</b>  |
|     | Case:    | <u>NetApp, Inc. v. Proven Networks, LLC</u><br>IPR2022-00644  |
|     | Matter:  | <i>Inter Partes</i> Review, allocating resources  |
|     | Project: | Declaration to support IPR petition   |
| L2. | 2022     | <b>Devlin Law Firm</b>  |
|     | Case:    | <u>Motion Offense, LLC v. Google, LLC</u><br>Western district of Texas, Waco division, Case No. 6:21-cv-00514-<br>ADA   |
|     | Matter:  | Patent infringement, telecommunication systems and networking   |
|     | Project: | Declaration regarding claim construction  |
| L3. | 2022     | <b>Jenner &amp; Block LLP</b>   |
|     | Case:    | <u>Netgear, Inc. v. WSOU Investments, LLC</u><br>IPR2022-00516; IPR2022-00606   |
|     | Matter:  | <i>Inter Partes</i> Review, telecommunication systems   |
|     | Project: | Two declarations to support 2 IPR petitions   |
| L4. | 2022     | <b>Calfee, Halter &amp; Griswold LLP</b>  |
|     | Case:    | <u>BoxCast Inc. v. Resi Media LLC</u><br>Eastern district of Texas, Marshall division, Case No. 2:21-cv-00217-<br>JRG   |
|     | Matter:  | Patent infringement, autonomous broadcasting  |
|     | Project: | Source code review, declaration regarding claim construction,<br>declaration regarding validity, declaration regarding infringement,<br>deposition                                |
| L5. | 2021     | <b>Fish &amp; Richardson, P.C.</b>  |
|     | Case:    | <u>Apple Inc. v. Ericsson Inc.</u><br>IPR2022-00341; IPR2022-00346;<br>IPR2022- <i>To be assigned</i> ; IPR2022- <i>To be assigned</i>  |
|     | Matter:  | <i>Inter Partes</i> Review, wireless communication systems  |
|     | Project: | Four declarations to support 4 IPR petitions  |
| L6. | 2022     | <b>Ropes &amp; Gray LLP</b>   |
|     | Case:    | <u>Godo Kaisha IP Bridge 1 v. Nokia Corporation, Ericsson Inc. et al.</u><br>Eastern district of Texas, Marshall division, Case No. 2:21-CV-213-<br>JRG; Case No. 2:21-CV-215-JRG |
|     | Matter:  | Patent infringement, wireless communication systems   |
|     | Project: | Declaration to support claim construction   |

- L7. 2022 **Fish & Richardson, P.C.**  
Case: Apple Inc. v. XR Communication Inc  
IPR2022-00367  
Matter: *Inter Partes* Review, adaptive antennas  
Project: Declaration to support IPR petition
- L8. 2021 **Fitch, Even, Tabin & Flannery**  
Case: L2 Mobile Technologies LLC v. Google LLC, Ford Motor Company  
Western district of Texas, Waco division, Case No. 6:21-cv-00358-  
ADA  
Matter: Patent infringement, wireless communication systems  
Project: Claim construction consulting
- L9. 2021 **Morgan Lewis**  
Case: Intellectual Tech LLC v. Zebra Technologies Corporation  
Western district of Texas, Waco division, Case No. 6:19-cv-00628-  
ADA  
Matter: Patent infringement, RFID tags  
Project: Source code review, claim construction consulting
- L10. 2021 **Carter Arnett**  
Case: Correct Transmission LLC v. Adtran, Inc.  
Northern district of Alabama, Northeastern division, Case No. 5:21-  
cv-00690-LCB  
Matter: Patent infringement, telecommunication systems  
Project: Declaration to support claim construction
- L11. 2021 **Carter Arnett**  
Case: Juniper Networks, Inc. v. Correct Transmission, LLC  
IPR2021-00463; IPR2021-00682  
Matter: *Inter Partes* Review, network communication systems  
Project: Two declarations to support 2 Patent Owner's responses, deposition
- L12. 2018 **King & Wood Mallesons LLP**  
Case: ToT Power Control, S.L. v. AT&T Mobility et al.; ToT Power  
Control, S.L. v. T-Mobile USA, Inc. et al.  
Western district of Texas, Waco division, Case No. 6:21-CV-00107-  
ADA; 6:21-CV-00109-ADA  
Matter: Patent infringement, WCDMA cellular systems  
Project: Declaration regarding claim construction
- L13. 2021 **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case: Xiaomi Communications Co., Ltd. v. Koninklijke KPN N.V.  
IPR2022-00025  
Matter: *Inter Partes* Review, network communication systems

- Project: Declaration to support IPR petition
- L14. 2021 **Carter Arnett**  
Case: Juniper Networks, Inc. v. Smart Path Connections, LLC  
IPR2021-001170  
Matter: *Inter Partes* Review, network communication systems  
Project: Declaration to support Patent Owner's preliminary response
- L15. 2021 **Devlin Law Firm**  
Case: Dyfan LLC v. Target Corporation  
District of Delaware, Case No. 6:19-cv-00179-ADA  
Matter: Patent infringement, network communications  
Project: Declaration to support summary judgement, deposition
- L16. 2021 **Alston & Bird LLP**  
Case: Stingray IP Solutions v. Signify N.V., et al.  
Eastern district of Texas, Marshall division, Case No. 2:21-cv-00043-JRG; Case No. 2:21-cv-00044-JRG  
Matter: Patent infringement, mobile ad-hoc networks  
Project: Declaration to support claim construction
- L17. 2021 **Cole Schotz P.C.**  
Case: SkyBell Technologies, Inc. v. Vivint Smart Home, Inc., SimpliSafe, Inc., and Arlo Technologies Inc  
In the Matter of Certain IP Camera Systems Including Video Doorbells and Components Thereof, ITC Investigation No. 337-TA-1242  
Matter: Patent infringement, wireless telecommunication systems  
Project: Source code review, expert report infringement and domestic industry, rebuttal expert report, three-day deposition
- L18. 2021 **Axinn, Veltrop & Harkrider LLP**  
Case: Koninklijke Philips N.V. v. Thales DIS AIS USA, LLC et al.  
In the Matter of Certain UMTS and LTE Cellular Communication Modules and Products Containing the Same, ITC Investigation No. 337-TA-1240  
Matter: Patent infringement, wireless communication systems  
Project: Expert report regarding non-infringement and no domestic industry, deposition, ITC hearing testimony
- L19. 2021 **Morgan, Lewis & Bockius LLP**  
Case: SIPCO, LLC v. Aruba Networks, LLC and Hewlett Packard Enterprise Company  
District of Delaware, Case No. 1:20-cv-00537-MN  
Matter: Patent infringement, wireless communication systems  
Project: Declaration regarding claim construction

- L20. 2021 **Ropes & Gray LLP**  
Case: Palo Alto Networks Inc. v. Centripetal Networks, Inc.  
IPR2021-01150, IPR2021-01151, IPR2021-01155, IPR2021-01156,  
IPR2021-01270, PGR2021-00108, IPR2021-01520, IPR2021-01521  
Matter: *Inter Partes* Review, network security systems  
Project: Seven declarations to support 7 IPR petitions, declaration to support  
post grant review
- L21. 2021 **Devlin Law Firm**  
Case: CDN Innovations, LLC v. Grande Communications Networks, LLC  
Eastern district of Texas, Sherman division, Case No. 4:20-cv-653-  
SDJ  
Matter: Patent infringement, telecommunication systems  
Project: Declaration to support infringement contentions
- L22. 2021 **Banner Witcoff**  
Case: Sisvel International S.A., 3G Licensing S.A. v. ZTE (USA) Inc. et al.  
Northern district of Texas, Case No. 3:20-cv-01289-M  
Matter: Patent infringement, wireless communication systems  
Project: Declaration to support claim construction, deposition
- L23. 2021 **Paul Hastings LLP**  
Case: G. Holdings Ltd. v. Samsung Electronics Co., et al.  
Eastern district of Texas, Marshall division, Case No. 2:20-cv-00342-  
JRG  
Matter: Patent infringement, electronic payment systems  
Project: Declaration to support claim construction
- L24. 2021 **Morgan, Lewis & Bockius LLP**  
Case: Aruba Networks, LLC and Hewlett Packard Enterprise Company v.  
SIPCO, LLC  
IPR2021-00787  
Matter: *Inter Partes* Review, wireless communication systems  
Project: Declaration to support IPR petition
- L25. 2021 **Jenner & Block LLP**  
Case: Virentem Ventures LLC D/B/A Enounce v. TiVo Corp and Xperi  
Holding Corporation  
District of Delaware, Case No. 20-787-MN  
Matter: Patent infringement, telecommunication systems  
Project: Declaration to support claim construction

- L26. 2021 **Carter Arnett**  
Case: Correct Transmission LLC v. Adtran, Inc. and Juniper Networks, Inc.  
Western district of Texas, Waco division, Case No. 6:20-cv-669-ADA  
Matter: Patent infringement, telecommunication systems  
Project: Source code review, declaration to support claim construction
- L27. 2021 **Fish & Richardson, P.C.**  
Case: Quectel Wireless Solutions Co. Ltd. v. Koninklijke Philips N.V.  
IPR2021-00558, IPR2021-00559, IPR2021-00561  
Matter: *Inter Partes* Review, wireless communication systems  
Project: Three declarations to support 3 IPR petitions
- L28. 2021 **Goldberg Kohn Ltd**  
Case: United States ex. rel. Todd Heath v. Wisconsin Bell, Inc  
District of Columbia, Case No. 11-cv-01897  
Matter: Networking systems  
Project: Technology consulting
- L29. 2021 **Fish & Richardson, P.C.**  
Case: Samsung Electronics Co. Ltd. v. Ericsson Inc.  
IPR2021-00447, IPR2021-00588, IPR2021-00613, IPR2021-00614,  
IPR2021-00643, IPR2021-00645, IPR2021-00684  
Matter: *Inter Partes* Review, wireless communication systems  
Project: Seven declarations to support 7 IPR petitions
- L30. 2020 **Kilpatrick Townsend & Stockton LLP**  
Case: GREE Inc. v. Supercell Oy  
Eastern district of Texas, Marshall division, Case No. 2:19-cv-00413-  
JRG-RSP  
Matter: Patent infringement, mobile gaming  
Project: Source code review, infringement expert report, supplemental expert  
report, validity expert report, deposition
- L31. 2020 **Banner Witcoff**  
Case: Sisvel International S.A., 3G Licensing S.A. v. ZTE (USA) Inc. et al.  
Northern district of Texas, Case No. 3:19-cv-01694-N  
Matter: Patent infringement, wireless communication systems  
Project: Declaration to support claim construction, deposition
- L32. 2020 **Fish & Richardson, P.C.**  
Case: Cellco Partnership D/B/A Verizon Wireless v. Huawei Technologies  
Co., Ltd  
IPR2020-01352, IPR202-01356, IPR2020-01357  
Matter: *Inter Partes* Review, network communication systems  
Project: Three declarations to support 3 Patent Owner responses

- L33. 2020 **Kilpatrick Townsend & Stockton LLP**  
Case: GREE Inc. v. Supercell Oy  
Eastern district of Texas, Marshall division, Case No. 2:20-cv-00113-JRG-RSP  
Matter: Patent infringement, mobile gaming  
Project: Source code review, declaration supporting claim construction, infringement expert report, validity expert report, supplemental report, deposition
- L34. 2020 **Kilpatrick Townsend & Stockton LLP**  
Case: GREE Inc. v. Supercell Oy  
Eastern district of Texas, Marshall division, Case No. 2:19-cv-00200-JRG-RSP, Case No. 2:19-cv-00237-JRG-RSP, Case No. 2:19-cv-00310-JRG-RSP; Case No. 2:19-cv-00311-JRG-RSP  
Matter: Patent infringement, mobile gaming  
Project: Source code review, four infringement expert reports, two supplemental infringement expert reports, four validity expert reports, two supplemental expert reports, two second supplemental expert reports, 3-day deposition, jury trial testimony
- L35. 2020 **Sheridan Ross P.C.**  
Case: Justservice.net LLC v. Dropbox, Inc.  
Western district of Texas, Waco division, Case No. 6:20-CV-00070-ADA  
Matter: Patent infringement, computer systems and networking  
Project: Source code review, declaration regarding claim construction
- L36. 2020 **Perkins Coie LLP**  
Case: Huizhou TCL Mobile Communication Co. Ltd., TCT Mobile (US) Inc., and TCL Mobile Communication (HK) Co., Ltd. v. Wi-LAN Inc.  
Matter: *Ex Partes* Reexamination, QoS enhancements for wireless IP networks  
Project: Declaration to support Requesters
- L37. 2020 **Perkins Coie LLP**  
Case: Intel Corporation v. UNM Rainforest Innovations  
IPR2020-01576, IPR2020-01578, IPR2020-*to be assigned*  
Matter: *Inter Partes* Review, wireless broadband  
Project: Three declarations to support three IPR petitions
- L38. 2020 **Calfee, Halter & Griswold LLP**  
Case: Motorola Solutions, Inc. v. Hytera Communications Corp. Ltd. et al.  
Northern district of Illinois, Case No. 1:17-cv-01972  
Matter: Patent infringement, two-way radios  
Project: Declaration regarding claim construction, deposition

- L39. 2020 **Fish & Richardson, P.C.**  
Case: Huawei Technologies Co., Ltd et al. v. Verizon Communications, Inc.  
et al.  
Western district of Texas, Waco division, Case No. 6-20-cv-00090  
Matter: Patent infringement, video communication  
Project: Source code review, declaration regarding claim construction,  
infringement expert report, validity expert report, deposition
- L40. 2020 **Kilpatrick Townsend & Stockton LLP**  
Case: GREE Inc. v. Supercell Oy  
Eastern district of Texas, Marshall division, Case No. 2:19-cv-00070-  
JRG-RSP, Case No. 2:19-cv-00071-JRG-RSP  
Matter: Patent infringement, mobile gaming  
Project: Source code review, two infringement expert reports, two  
supplemental infringement expert reports, two second supplemental  
infringement expert reports, two rebuttal expert reports on validity,  
two-day deposition, seven declarations supporting Gree's opposition  
to Supercell's motions for summary judgement, jury trial testimony
- L41. 2020 **Cooley LLP**  
Case: Saint Lawrence Communications, LLC v. Amazon.com, Inc., et al.  
Eastern district of Texas, Marshall division, Case No. 2:19-cv-00027-  
JRG  
Matter: Patent infringement, AMR-WB, speech compression, coding and  
decoding  
Project: Invalidity expert report
- L42. 2020 **Prince Lobel Tye LLP**  
Case: Intellectual Ventures I and II LLC v. VMware, Inc.  
Western district of Texas, Austin division, Case No. 1:19-cv-01075-  
ADA  
Matter: Patent infringement, networking systems  
Project: Declaration to support claim construction
- L43. 2020 **Gibson, Dun & Crutcher LLP**  
Case: Cellular Evolution LLC v. T-Mobile US, Inc. et al.  
Eastern district of Texas, Marshall division, Case No. 2:19-cv-232-JRG  
Matter: Patent infringement, cellular systems  
Project: Invalidity consulting
- L44. 2020 **Faegre Baker Daniels LLP**  
Case: CommScope, Inc. v. Rosenberger Technology, et al.  
District of New Jersey, Case No. 19-cv-15962-MCA-LDW  
Matter: Trade secret software, base station antenna design  
Project: Declaration, deposition



- L45. 2020 **Ropes & Gray LLP**  
Case: Canon, Inc. v. TCL Electronics Holdings Ltd., et al.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-546-JRG  
Matter: Patent infringement, communication interfaces  
Project: Source code review, declaration to support claim construction, deposition
- L46. 2019 **Perkins Coie LLP**  
Case: Huizhou TCL Mobile Communication Co. Ltd., TCT Mobile (US) Inc., and TCL Mobile Communication (HK) Co., Ltd. v. Wi-LAN Inc.  
IPR2020-00302, IPR2020-00303  
Matter: *Inter Partes* Review, QoS enhancements for wireless IP networks  
Project: Two declarations to support two IPR petitions
- L47. 2019 **Fish & Richardson**  
Case: Bell Northern Research v. Huawei, et al.  
Southern district of California, Case No. 3:18-cv-1784-CAB-BLM  
Matter: Patent infringement, wireless networks  
Project: Invalidity consulting
- L48. 2019 **K & L Gates LLP**  
Case: EVS CODEC Technologies, LLC and Saint Lawrence Communications, LLC v. ZTE Corporation, et al.  
Northern district of Texas, Dallas division, Case No. 3:19-cv-00385-MBH  
Matter: Patent infringement, EVS, speech compression, coding and decoding  
Project: Invalidity expert report
- L49. 2019 **Feinberg Day Alberti Lim & Belloli LLP**  
Case: Uniloc 2017 LLC v. AT&T Mobility LLC, et al.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-00514-JRG  
Matter: Patent infringement, wireless frequency bands and devices  
Project: Two declarations to support claim construction, deposition
- L50. 2019 **Susman Godfrey LLP**  
Case: Sol IP, LLC v. AT&T Mobility LLC, et al.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-00526; 2:18-cv-00527; and 2:18-cv-00528  
Matter: Patent infringement, Wi-Fi and LTE  
Project: Validity consulting

- L51. 2019 **Ropes & Gray LLP**  
Case: Huawei Technologies Co. Ltd. v. Harris Global Communications, Inc.  
IPR2019-01512, IPR2019-01631  
Matter: *Inter Partes* Review, routing and security in wireless networks  
Project: Two declarations to support two IPR petitions
- L52. 2019 **Ropes & Gray LLP**  
Case: Harris Corporation v. Huawei Device USA, Inc. et al.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-00439-JRG  
Matter: Patent infringement, routing and security in wireless networks  
Project: Declaration to support claim construction
- L53. 2019 **Erise IP**  
Case: Semcon IP Inc. v. ASUSTeK Computer Inc.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-00193-JRG  
Matter: Patent infringement, adaptive power control  
Project: Non-infringement expert report
- L54. 2019 **Cooley LLP**  
Case: Facebook Inc. v. BlackBerry Corp. et al.  
Northern District of California, Oakland division, Case No. 4:18-cv-05434-JSW  
Matter: Patent infringement, mobile computing  
Project: Declaration to support claim construction
- L55. 2019 **Sidley Austin LLP**  
Case: Semcon IP Inc. v. Amazon.com, Inc.  
Eastern district of Texas, Marshall division, Case No. 2:18-cv-00192-JRG  
Matter: Patent infringement, adaptive power control  
Project: Expert report regarding patent marking, rebuttal report regarding patent marking, deposition
- L56. 2019 **Oblon, McClelland, Maier & Neustadt, LLP**  
Case: MV3 Partners LLC v. Roku, Inc.  
Western district of Texas, Waco division, Case No. 6:18-cv-308-ADA  
Matter: Patent infringement, mobile set top box  
Project: Declaration to support claim construction, deposition, Markman hearing testimony
- L57. 2019 **Banner & Witcoff, LTD.**  
Case: Kathrein USA, Inc. v. Fractus S.A.  
IPR2019-00954, IPR2019-00955, IPR2019-00956, IPR2019-00957  
Matter: *Inter Partes* Review, multiband antenna arrays

- Project: Four declarations to support four IPR petitions
- L58. 2019 **Fish & Richardson, P.C.**  
Case: LG Electronics Inc. v. Saint Lawrence Communications LLC  
Southern district of New York, Case No. 1:18-cv-11082-DLC  
Matter: Patent infringement, EVS, speech compression, coding and decoding  
Project: Declaration relating to motion for summary judgment, expert report, deposition
- L59. 2019 **Ropes & Gray LLP**  
Case: SIPCO, LLC v. Emerson Electric Co.  
In the Matter of Certain Wireless Mesh Networking Products and Related Components Thereof, ITC Investigation No. 337-TA-1131  
Matter: Patent infringement, links in wireless networks and remote monitoring  
Project: Source code review, declaration to support claim construction, invalidity expert report, rebuttal expert report regarding non-infringement and no domestic industry
- L60. 2019 **Fish & Richardson, P.C.**  
Case: Maxell Ltd. v. Huawei Technologies Co. Ltd., ZTE, et al.  
Eastern district of Texas, Texarkana division, Case No. 5:18-cv-0033-RWS  
Matter: Patent infringement, portable computing devices  
Project: Declaration regarding claim construction
- L61. 2019 **Ropes & Gray LLP**  
Case: Emerson Electric Co. v. SIPCO, LLC  
IPR2019-00548, IPR2019-00549  
Matter: *Inter Partes* Review, routing in wireless networks  
Project: Two declarations to support two IPR petitions
- L62. 2018 **Mishcon de Reya New York LLP; King & Wood Mallesons LLP**  
Case: ChanBond, LLC v. Cox Communications, Inc.  
District of Delaware, Case No. 1:15-cv-00849-RGA  
Matter: Patent infringement, wideband signal distribution system  
Project: Validity expert report, deposition, sur-reply expert report, second sur-reply expert report, second deposition, jury trial with settlement mid-trial
- L63. 2018 **Fish & Richardson, P.C.**  
Case: In re: Qualcomm Antitrust Litigation (Client: Apple)  
Southern district of California, Case No. 3:17-cv-00108-GPC-MDD  
Matter: Qualcomm antitrust litigation  
Project: Two expert rebuttal reports, deposition

- L64. 2018 **Susman Godfrey LLP**  
Case: In re: Qualcomm Antitrust Litigation (Client: Class Action)  
Northern district of California, Case No. 5:17-md-02773-LHK  
Matter: Qualcomm antitrust litigation  
Project: Expert declaration on standard essential patents, expert report on  
deemed essential patents, rebuttal expert report, deposition
- L65. 2018 **284 Partners**  
Case: Federal Trade Commission. v. Qualcomm Incorporated  
Northern district of California, Case No. 5:17-cv-00220  
Matter: Qualcomm antitrust litigation  
Project: Expert report on standard essential patents, expert rebuttal report,  
deposition
- L66. 2018 **Vorys, Sater, Seymour and Pease LLP**  
Case: Route1 Inc. v. Airwatch LLC  
District of Delaware, Case No. 17-331-RGA  
Matter: Patent infringement, remote access  
Project: Source code review, declaration regarding claim construction,  
infringement expert report, validity expert report, reply expert report,  
deposition, three declarations regarding re-exam
- L67. 2018 **Sidley Austin LLP**  
Case: Samsung Electronics Co., Ltd v. Huawei Technologies Co., Ltd.  
IPR2017-01471, IPR2017-01474, IPR2017-01475  
Matter: *Inter Partes* Review, 4G/LTE  
Project: Three declarations to support three Patent Owner responses,  
supplemental declaration, deposition
- L68. 2018 **Fitzpatrick Cella Harper & Scinto**  
Case: IPC Systems, Inc. v. Cloud9 Technologies, LLC  
District of Delaware, Case No. 16-cv-443-GMS  
Matter: Patent infringement, telephone stations and trading turrets  
Project: Source code review, declaration regarding claim construction,  
supplemental declaration regarding claim construction
- L69. 2018 **Haynes and Boone, LLP**  
Case: LG Electronics Inc., et al. v. Wi-LAN Inc., et al.  
IPR2018-00673, IPR2018-00674, IPR2018-00704, IPR2018-00705,  
IPR2018-00709, IPR2018-00710  
Matter: *Inter Partes* Review, bandwidth allocation  
Project: Six declarations to support six IPR petitions, two depositions, two  
reply declarations

- L70. 2018 **Pillsbury Winthrop Shaw Pittman LLP**  
Case: Cellular Communications Equipment v. ZTE, HTC Corporation, et al.  
Eastern district of Texas, Case No. 6:16-cv-475-RWS  
Matter: Patent infringement, LTE, power control, emergency notification  
Project: Invalidity expert report, deposition
- L71. 2018 **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case: FanDuel, Inc. DraftKings, Inc., and Bwin.Party Digital Entertainment  
PLC. v. CG Technology Development, LLC  
IPR2017-00902, IPR2017-01333, IPR2017-01491, IPR2017-01532  
Matter: *Inter Partes* Review, location-based gaming  
Project: Four declarations to support four Patent Owner responses, two  
supplemental declarations, four depositions
- L72. 2018 **Calfee, Halter & Griswold LLP**  
Case: Hytera Communications Corp. Ltd. v. Motorola Solutions, Inc.  
Northern district of Ohio, Case No. 1:17-cv-01794-DNC  
Matter: Patent infringement, two-way radios  
Project: Source code review, declaration regarding claim construction, rebuttal  
declaration regarding claim construction, deposition, infringement  
expert report, validity expert report, two-day deposition
- L73. 2017 **Covington & Burling LLP**  
Case: Sharp Corporation, et al. v. Hisense Co., Ltd., et al.  
In the Matter of Certain Wi-Fi Enabled Electronic Devices and  
Components Thereof, ITC Investigation No. 337-TA-1072  
Matter: Patent infringement, Wi-Fi, OFDMA  
Project: Declaration regarding claim construction
- L74. 2017 **Vorys, Sater, Seymour and Pease LLP**  
Case: Airwatch LLC and VMWare Inc. v. Route1 Inc.  
IPR2017-02145  
Matter: *Inter Partes* Review, remote access  
Project: Declaration to support Patent Owner response
- L75. 2017 **Arnold & Porter Kaye Scholer**  
Case: Uniloc USA, Inc. v. Google, Inc.  
Eastern district of Texas, Marshall division, Case No. 2:17-cv-0214-  
JRG, 2:17-cv-0224-JRG, 2:17-cv-0231-JRG, 2:17-cv-0465-JRG,  
2:17-cv-0466-JRG, 2:17-cv-0467JRG  
Matter: Patent infringement, VoIP messaging  
Project: Invalidity consulting

- L76. 2017 **Simpson Thacher & Bartlett LLP**  
Case: XR Communications, LLC. v. Ubiquiti Networks, Inc.  
Central district of California, Case No. 2:17-cv-02968-AG(JCGx)  
Matter: Patent infringement, Wi-Fi and adaptive antennas  
Project: Declaration regarding claim construction, deposition
- L77. 2017 **Covington & Burling LLP**  
Case: Huawei Device USA Inc. v. Hitachi Maxell, Ltd.  
IPR2018-00209, IPR2018-00210  
Matter: *Inter Partes* Review, base station selection, GPS/Cellular location  
Project: Two declarations to support two IPR petitions
- L78. 2017 **Calfee, Halter & Griswold LLP**  
Case: Hytera Communications Corp. Ltd. v. Motorola Solutions, Inc.  
IPR2018-00128, IPR2017-02183  
Matter: *Inter Partes* Review, two-way radios  
Project: Declaration to support IPR petition, deposition, two supplemental declarations, two depositions
- L79. 2017 **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case: Hytera Communications Corp. Ltd. v. Motorola Solutions, Inc.  
IPR2017-02179, IPR2017-02183  
Matter: *Inter Partes* Review, two-way radios  
Project: Two declarations to support two IPR petitions, deposition
- L80. 2017 **Mayer Brown LLP**  
Case: Silver Spring Networks, Inc. v. Sunrise Technologies, Inc.  
Silver Spring Networks, Inc. v. Weatherproof Wireless, LLC  
IPR2017-*To Be Assigned*, IPR2017-*To Be Assigned*  
Matter: *Inter Partes* Review, power meter  
Project: Two declarations to support two IPR petitions
- L81. 2017 **Covington & Burling LLP**  
Case: Hitachi Maxell, Ltd. v. Huawei Device USA Inc. et al.  
Eastern district of Texas, Texarkana division, Case No. 5:16-cv-00178-RWS  
Matter: Patent infringement, 3G/4G  
Project: Source code review, declaration regarding claim construction, invalidity expert report, non-infringement expert report, non-infringing alternatives expert report, two depositions
- L82. 2017 **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case: LG Electronics, Inc. et al. v. BLU Products, Inc. and CT Miami, LLC  
In the Matter of Certain LTE Wireless Communication Devices and Components Thereof, ITC Investigation No. 337-TA-1051  
Matter: Patent infringement, 4G/LTE

- Project: Declaration regarding claim construction, second declaration regarding claim construction
- L83. 2017 **Sidley Austin LLP**  
Case: Huawei Technologies Co., Ltd. v. Samsung Electronics Co., Ltd.  
IPR2017-01979, IPR2017-01980, IPR2017-01986  
Matter: *Inter Partes* Review, 4G/LTE  
Project: Three declarations to support three IPR petitions, deposition
- L84. 2017 **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case: Motorola Solutions, Inc. v. Hytera Communications Corp. Ltd. et al.  
In the Matter of Certain Two-way Radio Equipment Systems, Related Software and Components Thereof, ITC Investigation No. 337-TA-1053  
Matter: Patent infringement, two-way radio  
Project: Source code review, declaration regarding claim construction, invalidity expert report, non-infringement expert report, deposition, ITC hearing testimony
- L85. 2017 **Haynes and Boone, LLP**  
Case: Rackspace US, Inc. v. Realtime Data LLC  
IPR2017-01691  
Matter: *Inter Partes* Review, data compression  
Project: Declaration to support IPR petition
- L86. 2017 **Pillsbury Winthrop Shaw Pittman LLP**  
Case: ZTE (USA), HTC Corporation, et al. v. Cellular Communications Equipment  
IPR2017-01508, IPR2017-01509  
Matter: *Inter Partes* Review, LTE, power control, emergency notification  
Project: Two declarations to support two IPR petitions, two depositions
- L87. 2017 **Alston & Bird LLP; Womble Carlyle Sandridge & Rice LLP**  
Case: Itron, Inc. and Duke Energy Corp. v. Smart Meter Technologies  
IPR2017-01199  
Matter: *Inter Partes* Review, power meter  
Project: Declaration to support IPR petition, deposition
- L88. 2017 **Haynes and Boone, LLP**  
Case: Ericsson Inc. v. Regents of the University of Minnesota  
IPR2017-01186, IPR2017-01200, IPR2017-01213  
Matter: *Inter Partes* Review, OFDM and MIMO  
Project: Three declarations to support three IPR petitions

- L89. 2017 **Quinn Emanuel Urquhart & Sullivan, LLP**  
Case: GENBAND US, LLC v. Metaswitch Networks Ltd, et al.  
Eastern district of Texas, Marshall division, Case No. 2:16-cv-582-JRG-RSP  
Matter: Patent infringement, Internet protocols and VoIP  
Project: Expert report regarding essentiality
- L90. 2017 **Mayer Brown LLP**  
Case: Uniloc USA, Inc. et al. v. Avaya Inc., ShoreTel, Inc., et al.  
Eastern district of Texas, Tyler division, Case Nos. 6:15-cv-1168-JRG  
Matter: Patent infringement, instant messaging and conference calling  
Project: Source code review, non-infringement consulting
- L91. 2017 **Fish & Richardson P.C.**  
Case: Nokia Solutions and Networks US LLC, et al. v. Huawei Technologies Co. Ltd., et al.  
Eastern district of Texas, Marshall division, Case Nos. 2:16-cv-753-JRG-RSP, 2:16-cv-754  
Matter: Patent infringement, 4G/LTE  
Project: Claim construction, two declarations
- L92. 2017 **Rothwell Figg Ernst & Manbeck, PC; Pepper Hamilton LLP**  
Case: Samsung Electronics, et al. v. Rembrandt Wireless Technologies, LP  
IPR2015-00555  
Matter: *Ex Parte* Reexamination, Bluetooth  
Project: Two declarations to support two Patent Owner responses, supplemental declaration to support Patent Owner reply
- L93. 2016 **Sidley Austin LLP**  
Case: Huawei Technologies Co., et al. v. Samsung Electronics Co, et al. and Samsung Research America v. Hisilicon Technologies Co, LTD  
Northern district of California, San Francisco division, Case No. 3:16-cv-2787-WHO  
Matter: Patent infringement, 3G/4G/LTE  
Project: Source code review, declaration regarding claim construction, declaration opposing summary judgement, infringement expert report, invalidity expert report, non-infringement expert report, validity expert report, two depositions
- L94. 2016 **Bragalone Conroy PC**  
Case: Securus Technologies, Inc. v. Global Tel\*Link Corporation  
CBM2017-00034  
Matter: Covered Business Method Review, call monitoring and recording  
Project: Declaration to support CBM petition, deposition



- L95. 2016 **Braxton, Hilton & Perrone PLLC**  
Case: Biosonix, LLC. v. Hydrowave, LLC et al.  
Eastern district of Texas, Case No. 2:16-cv-139-RC  
Matter: Patent infringement, underwater transceivers  
Project: Claim construction, Markman hearing testimony
- L96. 2016 **Gray Reed & McGraw**  
Case: Optis Cellular Technology, LLC and PanOptis Patent Management, LLC. v. Blackberry Corporation, et al.  
Eastern district of Texas, Marshall division, Case No. 2:16-cv-59-JRG-RSP, Case No. 2:16-cv-61-JRG-RSP, Case No. 2:16-cv-62-JRG-RSP  
Matter: Patent infringement, LTE  
Project: Claim construction, three declarations regarding claim construction, deposition
- L97. 2016 **Ropes & Gray LLP; Davidson Berquist Jackson & Gowdey**  
Case: SIPCO, LLC et al v. Emerson Electric Co. et al  
Eastern district of Texas, Tyler division, Case No. 6:15-cv-907  
Emerson Electric Co. et al v. SIPCO, LLC et al.  
Northern district of Georgia, Atlanta division, Case No. 1:15-cv-00319-AT  
Matter: Patent infringement, links in wireless networks and remote monitoring  
Project: Source code review, invalidity consulting
- L98. 2016 **McKool Smith**  
Case: Regents of University of Minnesota v. AT&T Mobility LLC, et al.  
District of Minnesota, Case No. 0:14-cv-04666-JRT-TNL  
Matter: Patent infringement, LTE and MIMO  
Project: Non-infringement and invalidity consulting
- L99. 2016 **EIP US LLP**  
Case: GENBAND US, LLC et al. v. Metaswitch Networks Ltd  
IPR2015-01456, IPR2015-01457  
Matter: *Inter Partes* Review, media gateways  
Project: Two declarations to support Patent Owner responses, two depositions
- L100. 2016 **Haynes and Boone, LLP**  
Case: Cox Communications, Inc. v. AT&T Intellectual Property I, II, LP  
IPR2015-01187, IPR2015-01227, IPR2015-01273, IPR2015-01536  
Matter: *Inter Partes* Review, cable networks  
Project: Four declarations to support Patent Owner responses, four depositions

- L101. 2016      **Mayer Brown LLP**  
Case:      Odyssey Wireless v. Motorola Mobility LLC  
Eastern district of North Carolina, Western division, Case No. 5:14-cv-491-D  
Southern district of California, Case No. 3:15-cv-01741-H-RBB  
Matter:      Patent infringement, LTE  
Project:      Source code review, non-infringement consulting
- L102. 2016      **Cooley LLP; Finnegan LLP**  
Case:      Saint Lawrence Comm. LLC v. Motorola Mobility LLC, ZTE (USA) Inc., et al.  
Eastern district of Texas, Marshall division, Case No. 2:15-cv-000351-JRG, Case No. 2:15-cv-000349-JRG  
Matter:      Patent infringement, speech compression, coding and decoding  
Project:      Invalidity expert report, expert report regarding AMR-WB standard, expert report regarding Opus and Silk, supplemental expert report regarding invalidity, two-day depositions, jury trial testimony for Motorola
- L103. 2015      **Sidley Austin LLP**  
Case:      Evolved Wireless, LLC v. Microsoft Corp., et al.  
District of Delaware, Case No. 15-cv-546  
Matter:      Patent infringement, LTE  
Project:      Prior art and invalidity consulting
- L104. 2015      **McKool Smith**  
Case:      Optis Wireless Technology, LLC and PanOptis Patent Management, LLC. v. ZTE Corporation and ZTE (USA) Inc.  
Eastern district of Texas, Marshall division, Case No. 2:15-cv-300-JRG-RSP  
Matter:      Patent infringement, cellular messages and multimedia attachments  
Project:      Source code review, claim construction, declaration
- L105. 2015      **Fish & Richardson, P.C.**  
Case:      Saint Lawrence Comm. LLC v. LG Elec., Inc. et al.  
Eastern district of Texas, Marshall division, Case No. 2:14-cv-1055-JRG  
Matter:      Patent infringement, speech compression, coding and decoding  
Project:      Invalidity expert report
- L106. 2015      **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case:      LG Electronics, Inc. v. Cellular Communications Equipment LLC  
IPR2016-00178  
Matter:      *Inter Partes* Review, LTE  
Project:      Declaration to support IPR petition

- L107. 2015      **McKool Smith**  
Case:      AT&T, et al. v. Cox Communication, Inc., et al.  
District of Delaware, Case No. 14-1106-GMS  
Matter:      Patent infringement, cable networks  
Project:      Claim construction, declaration
- L108. 2015      **McKool Smith**  
Case:      Ericsson Inc., et al. v. TCL Communication, et al.  
Eastern district of Texas, Marshall division, Case No. 2:15-cv-00011-RSP  
Matter:      Patent infringement, wireless devices and systems  
Project:      Source code review, claim construction, declaration, infringement expert report, validity expert report, two-day depositions
- L109. 2015      **Foley & Lardner LLP**  
Case:      Kyocera Communications, Inc. v. Cellular Communications Equipment LLC  
IPR2015-01559, IPR2015-01564  
Matter:      *Inter Partes* Review, LTE, power control, emergency notification  
Project:      Two declarations to support two IPR petitions
- L110. 2015      **Fish & Richardson, P.C.**  
Case:      Fairfield Industries Inc. v. Wireless Seismic, Inc.  
Southern district of Texas, Case No. 4:14-cv-02972-KPE  
Matter:      Patent infringement, wireless sensor networks  
Project:      Non-infringement expert report
- L111. 2015      **Quinn Emanuel Urquhart & Sullivan, LLP**  
Case:      GENBAND US, LLC v. Metaswitch Networks Ltd, et al.  
Eastern district of Texas, Marshall division, Case No. 2:14-cv-33-JRG-RSP  
Matter:      Patent infringement, Internet protocols and VoIP  
Project:      Expert report regarding essentiality, non-infringement expert report, rebuttal expert report regarding non-practice, supplemental rebuttal expert report, three-day depositions, jury trial testimony
- L112. 2015      **Duane Morris LLP; Foley & Lardner LLP**  
Case:      Mobile Telecommunications Technologies, LLC v. Leap Wireless International, Cricket Communications, Inc.  
Eastern district of Texas, Marshall division, Case No. 2:13-cv-00885-RSP  
Matter:      Patent infringement, OFDM and MIMO  
Project:      Non-infringement expert report, deposition
- L113. 2015      **Hogan Lovells US LLP; Kenyon & Kenyon LLP**  
Case:      One-E-Way v. Beats Electronics, LLC, Sony Corporation, et al.

- In the Matter of Certain Wireless Headsets, ITC Investigation No. 337-TA-943
- Matter: Patent infringement, wireless communication  
Project: Claim construction, declaration
- L114. 2015 **McKool Smith**  
Case: Solocron Media, LLC v. AT&T Inc., et al.  
Eastern district of Texas, Marshall division, Case No. 2:13-cv-1059-JRG  
Matter: Patent infringement, ringtone download  
Project: Claim construction, invalidity expert report
- L115. 2015 **EIP US LLP**  
Case: Good Technology Software, Inc. v. Mobile Iron, Inc.  
IPR2015-00833, IPR2015-00836, IPR2015-01090  
Matter: *Inter Partes* Review, software management in wireless devices  
Project: Three declarations to support three IPR petitions
- L116. 2015 **McKool Smith**  
Case: AirWatch LLC v. Good Technology Corp  
Northern district of Georgia, Case No. 1:14-cv-02281-SCJ  
Matter: Patent infringement, software management in wireless devices  
Project: Claim construction, declaration
- L117. 2015 **Simpson Thacher & Bartlett LLP**  
Case: IXI Mobile (R&D) Ltd. et al. v. Apple Inc.  
Southern district of New York, Case No. 14-cv-7594-RJS  
Matter: Patent infringement, PDA and Bluetooth  
Project: Invalidity consulting
- L118. 2014 **Bragalone Conroy PC**  
Case: Global Tel\*Link Corporation v. Securus Technologies, Inc.  
IPR2014-00785, IPR2014-00810, IPR2014-00824, IPR2014-00825, IPR2014-01278, IPR2014-01282, IPR2014-01283  
Matter: *Inter Partes* Review, VoIP call monitoring and recording, allocating telecommunication resources and information systems  
Project: Seven declarations to support seven Patent Owner responses, five depositions
- L119. 2014 **Orrick, Herrington & Sutcliffe LLP**  
Case: Shopkick, Inc. v. Novitaz, Inc.  
IPR2015-00277, IPR2015-00278  
Matter: *Inter Partes* Review, wireless customer service management  
Project: Two declarations to support two IPR petitions

- L120. 2014 **Paul Hastings LLP**  
Case: Cellular Communications Equipment LLC v. AT&T, et al.  
Eastern district of Texas, Tyler division, Case No. 6:13-cv-507-LED  
(Lead Case for Consolidation)  
Matter: Patent infringement, 3G cellular communication  
Project: Claim construction, declaration
- L121. 2014 **Baker Botts LLP**  
Case: Orlando Communications LLC v. AT&T, et al.  
M.D. Florida, Case No. 6:14-cv-01021  
Matter: Patent infringement, 3G/4G cellular communication  
Project: Non-infringement and claim construction consulting
- L122. 2014 **EIP US LLP**  
Case: Good Technology Software, Inc. v. AirWatch, LLC  
IPR2015-00248, IPR2015-00875  
Matter: *Inter Partes* Review, software management in wireless devices  
Project: Two declarations to support two IPR petitions
- L123. 2014 **Bragalone Conroy PC**  
Case: Securus Technologies, Inc. v. Global Tel\*Link Corporation  
IPR2015-00153, IPR2015-00155, IPR2015-00156  
Matter: *Inter Partes* Review, VoIP call monitoring and recording  
Project: Three declarations to support three IPR petitions, two depositions
- L124. 2014 **Andrews Kurth LLP**  
Case: Sony Mobile Communications (USA) v. Adaptix Inc.  
IPR2014-01524, IPR2014-01525  
Matter: *Inter Partes* Review, subcarrier selection in LTE  
Project: Two declarations to support two IPR petitions, deposition
- L125. 2014 **Step toe & Johnson LLP; Baker & McKenzie LLP**  
Case: VTech Communications, Inc. and Uniden America Corporations v. Spherix Incorporated  
IPR2014-01432  
Matter: *Inter Partes* Review, IP telephony  
Project: Declaration to support IPR petition, deposition, reply declaration, deposition
- L126. 2014 **Step toe & Johnson LLP; Baker & McKenzie LLP**  
Case: Spherix Inc. v. VTech Telecommunications Ltd., et al.  
Spherix Inc. v. Uniden Corp, et al.  
Northern district of Texas, Dallas Division, Case No. 3:13-cv-3494  
and 3:13-cv-3496  
Matter: Patent infringement, IP telephony  
Project: Claim construction, declaration, deposition

- L127. 2014      **McKool Smith**  
Case:      Good Technology Corp. v. MobileIron, Inc.  
Northern district of California, Case No. 5:12-cv-05826-PSG  
Matter:      Patent infringement, software management in wireless devices  
Project:      Claim construction, three declarations, claim invalidity expert report, non-infringement expert report, deposition, jury trial testimony
- L128. 2014      **Lee & Hayes**  
Case:      Broadcom Corp. v. Ericsson, Inc.  
IPR2013-00601, IPR2013-00602, and IPR2013-00636  
Matter:      *Inter Partes* Review, ARQ protocols  
Project:      Three declarations to support Patent Owner responses, two declarations to support Patent Owner Motion to Amend, deposition, two reply declarations
- L129. 2014      **Sidley Austin LLP**  
Case:      Adaptix, Inc. v. Huawei Technologies Co., et al.  
Eastern district of Texas, Case No. 6:13-cv-00438, 439, 440 and 441  
Matter:      Patent infringement, subcarrier selection in LTE  
Project:      Source code review, non-infringement consulting
- L130. 2014      **Finnegan Henderson Farabow Garrett & Dunner LLP**  
Case:      Cell and Network Selection LLC v. Huawei Technologies Co., et al.  
Eastern district of Texas, Case No. 6:13-cv-00404-LED-JDL  
Matter:      Patent infringement, base station selection in LTE  
Project:      Non-infringement consulting
- L131. 2014      **Feinberg Day Alberti & Thompson LLP**  
Case:      DSS Technology Management, Inc. v. Apple Inc.  
Eastern district of Texas, Tyler division, Case No. 6:13-cv-00919-JDL  
Matter:      Patent infringement, PDA and Bluetooth  
Project:      Claim construction and invalidity consulting
- L132. 2014      **Sheppard Mullin Richter & Hampton LLP**  
Case:      Digcom Inc. v. ZTE (USA), Inc.  
District of Nevada, Case No. 3:13-cv-00178-RCJ-WGC  
Matter:      Patent infringement, cellular communication  
Project:      Claim construction consulting
- L133. 2014      **Lott & Fischer**  
Case:      Zenith Electronics, LLC, et al. v. Craig Electronics, Inc.  
Southern district of Florida, Case No. 9:13-cv-80567-DMM/DLB  
Matter:      Patent infringement, HDTV transmission and reception  
Project:      Opening expert report regarding nonessentiality

- L134. 2013      **McKool Smith**  
Case: Zenith Electronics, LLC, et al. v. Curtis International Ltd.  
Southern district of Florida, Case No. 9:13-cv-80568-DMM/DLB  
Matter: Patent infringement, HDTV transmission and reception  
Project: Claim construction, declaration, deposition
- L135. 2013      **Gibson Dunn**  
Case: Straight Path IP Group v. Sharp Corp. and Sharp Electronics Corp.  
In the Matter of Certain Point-to-Point Network Communication  
Devices and Products Containing Same, ITC Investigation No. 337-  
TA-892  
Matter: Patent infringement, point-to-point network communication  
Project: Non-infringement consulting
- L136. 2013      **Kilpatrick Townsend & Stockton LLP; Cooley LLP**  
Case: Monec Holding AG v. Motorola Mobility LLC, HTC, et al.  
District of Delaware, Case No. 1:11-cv-798-LPS-SRF  
Matter: Patent infringement, displaying books on tablets  
Project: Non-infringement expert report for Motorola, non-infringement expert  
report for HTC, deposition
- L137. 2013      **Gartman Law Group**  
Case: Lone Star WiFi LLC v. Legacy Stonebriar Hotel, Ltd; et al.  
Eastern district Of Texas, Tyler, Case No. 6:12-cv-957  
Matter: Patent infringement, levels of access in Wi-Fi networks  
Project: Claim validity consulting
- L138. 2013      **White & Case, LLP**  
Case: Nokia Corp and Nokia, Inc. v. HTC Corp and HTC America, Inc. and  
Google, Inc.  
In the Matter of Certain Portable Electronic Communication Devices,  
Including Mobile Phones and Components Thereof, ITC Investigation  
No. 337-TA-885  
Matter: Patent infringement, App download and installation  
Project: Non-infringement consulting
- L139. 2013      **Heim, Payne & Chorush, LLP**  
Case: Rembrandt Wireless v. Samsung Electronics Co., et al.  
Eastern district of Texas, Marshall, Case No. 2:13-cv-213-JRG-RSP  
Matter: Patent infringement, Bluetooth  
Project: Expert report regarding validity, deposition, jury trial
- L140. 2013      **Baker Hostetler; Davis Polk & Wardwell LLP**  
Case: Comcast v. Sprint; and Nextel Inc.  
Eastern district of Pennsylvania, Case No. 2:12-cv-00859-JD  
Matter: Patent infringement, SMS/MMS in Cellular Networks

- Project: Infringement expert report, validity expert report, reply expert report, declaration, two-day depositions, jury trial testimony
- L141. 2013      **McKool Smith**  
Case: Samsung Electronics America v. Ericsson Inc.  
In the Matter of Certain Wireless Communications Equipment and Articles Therein, ITC Investigation No. 337-TA-866  
Matter: Patent infringement, LTE uplink and downlink  
Project: Source code review, prior art research, claim construction, claim invalidity expert report, non-infringement expert report, ITC hearing testimony
- L142. 2012      **DLA Piper US LLP**  
Case: CSR Technology Inc. v. Freescale Semiconductor, Inc.  
USDC-San Francisco, Case No. 3:12-cv-02619-RS  
Matter: Patent infringement, radio transceivers  
Project: Claim construction, declaration
- L143. 2012      **Fish & Richardson P.C.**  
Case: GPNE Corp. v. Apple, Inc.; et al.  
USDC-ND California, Case No. 5:12-cv-02885-LHK  
Matter: Patent infringement, resource allocation in wireless networks  
Project: Prior art research consulting
- L144. 2012      **Polsinelli Shughart PC**  
Case: Single Touch Interactive, Inc. v. Zoove Corporation  
Northern district of California, Case No. 3:12-cv-00831-JSC  
Matter: Patent infringement, abbreviated dialing, information delivery  
Project: Claim construction, Markman hearing testimony, two declarations
- L145. 2012      **K & L Gates**  
Case: EON Corp. IP Holdings, LLC v. Novatel Wireless, Inc.; et al.  
DC-Tyler, Texas, Case No. 6:11-cv-00015-LED-JDL  
Matter: Patent infringement, wireless modem and 3G services  
Project: Non-infringement expert report, deposition
- L146. 2012      **Simpson Thacher & Bartlett LLP**  
Case: CSR Technology, Inc. v. Bandspeed, Inc.  
Western district of Texas, Case No. 1:12-cv-297-LY  
Matter: Patent infringement, packet identification in 2.4 GHz and 5 GHz  
Project: Source code review, Markman hearing testimony, infringement expert report
- L147. 2012      **Sheppard Mullin Richter & Hampton LLP**  
Case: Wi-LAN v. HTC America, Inc., et al.  
Eastern district of Texas, Case No. 6:10-cv-521-LED



- Matter: Patent infringement, CDMA, Orthogonal Codes  
Project: Source code review, non-infringement expert report, deposition, jury trial testimony
- L148. 2012 **Dechert LLP**  
Case: Hitachi v. TPV and Vizio, Inc.; and Vizio v. Hitachi, LTD.  
Eastern district of Texas, Case No. 2:10-cv-260  
Matter: Patent infringement, HD television transmission and reception  
Project: Prior art research, claim invalidity consulting
- L149. 2012 **Fish & Richardson P.C.; Covington & Burling; Alston & Bird; Brinks Hofer Gilson & Lione**  
Case: InterDigital Commc'n, LLC v. Huawei Tech. Co. LTD; LG Electronics, Inc.; Nokia, Inc.; and ZTE (USA) Inc.  
Certain Wireless Devices With 3G Capabilities and Components Thereof, ITC Investigation No. 337-TA-800  
Matter: Patent infringement, channel coding in UMTS, HSDPA  
Project: Non-infringement consulting
- L150. 2012 **Fish & Richardson P.C.; Covington & Burling; Alston & Bird; Brinks Hofer Gilson & Lione**  
Case: InterDigital Commc'n, LLC v. Huawei Tech. Co. LTD; LG Electronics, Inc.; Nokia, Inc.; and ZTE (USA) Inc.  
District of Delaware, Case No. 1:11-cv-00654-UNA  
Matter: Patent infringement, channel coding in UMTS, HSDPA  
Project: Non-infringement consulting
- L151. 2011 **O'Melveny & Myers LLP**  
Case: MobileMedia Ideas, LLC v. Apple, Inc.  
District of Delaware, Case No. 1:10-cv-00258-SLR-MPT  
Matter: Patent infringement, voice control, call rejection in mobile phones  
Project: Source code review, prior art research, declaration, claim invalidity expert report, non-infringement expert report, deposition, jury trial testimony
- L152. 2011 **Wilmer Cutler Pickering Hale and Dorr**  
Case: Apple, Inc. v. Samsung Electronics Co.  
Northern district of California, Case No. 5:11-cv-01846-LHK  
Matter: Patent infringement, channel coding in CDMA, E-AGCH, TFCI  
Project: Prior art research, claim construction consulting
- L153. 2011 **Weil, Gotshal & Manges LLP**  
Case: Vizio, Inc. v. Renesas Electronics America, Inc.  
ITC Investigation No. 337-TA-789  
Matter: Patent infringement, HD television transmission and reception  
Project: Claim invalidity consulting

- L154. 2011      **Shapiro Cohen**  
Case:      TenXc Wireless Inc. v. Andrew LLC  
             TenXc Wireless Inc. v. Mobi Antenna Technologies Ltd.  
Matter:      Patent infringement, antenna design, sectorized cellular network  
Project:      Claim validity consulting
- L155. 2010      **Fish & Richardson P.C.**  
Case:      Vizio, Inc., v. LG Electronics, Inc.  
             ITC Investigation No. 337-TA-733  
Matter:      Patent infringement, HD television transmission and reception  
Project:      Claim charts, claim construction expert report, deposition
- L156. 2010      **Fish & Richardson P.C.**  
Case:      Vizio, Inc., v. LG Electronics, Inc.  
             District of Maryland, Case No. 1:09-cv-1481-BEL  
Matter:      Patent infringement, HD television transmission and reception  
Project:      Claim charts, claim construction expert report, deposition
- L157. 2008      **Kaye Scholer LLP**  
Case:      eBay Inc. v. IDT.  
             Western district of Arkansas, Case No. 4:08-cv-4015-HFB  
Matter:      Patent infringement, long distance communication using Internet  
Project:      Prior art research, claim construction consulting
- L158. 2008      **Simpson Thacher & Bartlett LLP**  
Case:      Commil USA, LLC v. Cisco Systems, Inc.  
             Eastern district of Texas, Case No. 2:07-cv-00341-DF-CE  
Matter:      Patent infringement, two-level wireless protocol  
Project:      Prior art research
- L159. 2006      **Woodfill and Pressler**  
Case:      Charles Russell v. Interinsurance Exchange of the Auto Club  
             Harris County, Texas, Case No. 2005-19706  
Matter:      House fire and insurance claim  
Project:      Determining user location using cellular phone records, expert report,  
             deposition, jury trial testimony

## Consulting History

From: 8/2021      **Carter Arnett (Client: G+ Communications)**  
To: 8/2021      Dallas, TX  
Duties: Analyze patents for essentiality to 4G and 5G standards.

From: 2/2021      **ExpertsDirect Pty Ltd**  
To: 3/2021      Australia

Duties: Analyze antenna arrays.

From: 11/2020 **Licks Attorneys**  
 To: 1/2021 Brazil  
 Duties: Analyze patents for essentiality to 4G standards.

From: 6/2019 **Fish & Richardson, P.C. (Client: Huawei)**  
 To: present Dallas, TX  
 Duties: Analyze patents for essentiality to 3G, 4G, and 5G standards.

From: 1/2013 **Heim, Payne & Chorush, LLP**  
 To: 3/2013 Houston, TX  
 Duties: Analyze patents on wireless technologies.

From: 4/2007 **Collin County Sheriff's Office**  
 To: 5/2007 McKinney, TX  
 Duties: Analyzed cellular record data and determined user location in a double-homicide investigation.

From: 4/2004 **Allegiant Integrated Solutions**  
 To: 5/2004 Fort Worth, TX  
 Duties: Designed and developed an integrated set of tools for fast deployment of wireless networks. The tools optimize the placement of Access Points and determine their respective channel allocations to minimize interference and maximize capacity.

From: 3/2002 **Input/Output Incorporated**  
 To: 4/2002 New Orleans, LA  
 Duties: Designed and implemented an algorithm in MATLAB for optimizing the frequency selection process used by sonar for scanning the bottom of the ocean.

From: 6/1998 **Teleware Corporation**  
 To: 7/1998 Seoul, South Korea  
 Duties: Designed and developed a software package for analyzing the capacity in a CDMA network to maximize the number of subscribers.

## Employment History

From: 1/2015 **University of North Texas**  
 To: Present Denton, TX  
 Position: *Associate Chair of Graduate Studies Department of Computer Science and Engineering*  
 In charge of all administrative duties related to the Master's and Ph.D. programs in the department.

From: 5/2008     **University of North Texas**  
To: Present     Denton, TX  
Position: *Tenured Associate Professor Department of Computer Science and Engineering*  
Conducting research on cellular networks and wireless sensor networks. Teaching wireless communication courses. Advising graduate and undergraduate students.

From: 9/2002     **University of North Texas**  
To: 5/2008     Denton, TX  
Position: *Assistant Professor Department of Computer Science and Engineering*  
Conducting research on WCDMA/UMTS wireless networks. Teaching wireless communication and computer architecture courses. Advising graduate and undergraduate students.

From: 1/2002     **University of New Orleans**  
To: 8/2002     New Orleans, LA  
Position: *Assistant Professor Department of Electrical Engineering*  
Designed and taught two new courses “Computer Systems Design I and II”. Developed a Computer Engineering Curriculum with strong hardware-design emphasis. Formed a wireless research group. Advised graduate and undergraduate students.

From: 10/2000     **Comspace Corporation**  
To: 12/2001     Coppell, TX  
Position: *Senior Systems Engineer*  
Designed, coded (in Matlab), and simulated Viterbi decoding, Turbo coding, trellis coded modulation (TCM), and Reed-Muller codes. Optimized soft decision parameters and interleavers for additive white Gaussian and Rayleigh faded channels. Extended the control and trunking of push-to-talk Logic Trunked Radio (LTR) to include one-to-one and one-to-many voice and data messaging.

From: 8/1996     **MinMax Corporation**  
To: 8/2000     Saint Louis, MO  
Position: *Research Associate*  
Designed software packages that provide the tools to flexibly allocate capacity in a CDMA network and maximize the number of subscribers. Analyzed and simulated different audio compression schemes. Validated, simulated (logical and timing), and developed the hardware architecture for an ATM switch capable of channel group switching.

From: 8/1994     **Washington University**  
To: 8/2000     Saint Louis, MO  
Position: *Research and Teaching Assistant*

Taught, consulted, and graded Circuit Analysis at the undergraduate level and Network Design at the graduate level.

## **Publications**

### **Conference Proceedings**

- C1. U.K. Dey, **R. Akl**, R. Chataut, “Throughput Improvement in Vehicular Communication by Using Low Density Parity Check (LDPC) Code,” *IEEE CCWC 2022 The 12th Annual Computing and Communication Workshop and Conference*, January 2022, paper #1570784297, 8 pgs.
- C2. U.K. Dey, **R. Akl**, R. Chataut, M. Robaei, “Selective MIMO in Vehicular Communication for Reliable Safety Services and High Speed Non-Safety Services,” *2021 IEEE 12<sup>th</sup> Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)*, 2021, pp. 785-790, 6 pgs.
- C3. R. Chataut, **R. Akl**, U.K. Dey, “An Efficient and Fast-convergent Detector for 5G and Beyond Massive MIMO Systems,” *2021 IEEE 12<sup>th</sup> Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)*, 2021, pp. 866-872, 7 pgs.
- C4. M. Robaei, **R. Akl**, “Millimeter-Wave Blockage Modeling And Mitigation,” *2021 IEEE International Workshop Technical Committee on Communications Quality and Reliability (CQR 2021)*, 2021, 6 pgs.
- C5. M. Robaei, **R. Akl**, “Characterizing Non-Stationary Millimeter-Wave Communication Using Fuzzy Entropy,” *2021 55th Annual Conference on Information Sciences and Systems (CISS)*, 2021, 6 pgs.
- C6. M. Robaei, **R. Akl**, R. Chataut, U.K. Dey, “Adaptive Millimeter-Wave Channel Estimation and Tracking,” *2021 23rd International Conference on Advanced Communication Technology (ICACT)*, February 2021, pp. 23-28, 6 pgs.
- C7. U.K. Dey, **R. Akl**, R. Chataut, M. Robaei, “Modified PHY Layer for High Performance V2X Communication using 5G NR,” *IEEE UEMCON 11<sup>th</sup> IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference*, October 2020, pp. 137-142, 6 pgs.
- C8. R. Chataut, **R. Akl**, “An Efficient and Fair Scheduling for Downlink 5G Massive MIMO Systems,” *IEEE Texas Symposium on Wireless and Microwave Circuits and Systems*, June 2020, paper no.TSWMCS2020-39, 8 pgs.
- C9. R. Chataut, **R. Akl**, “Efficient and Low-Complexity Iterative Detectors for 5G Massive MIMO Systems,” *IEEE DCOSS 2020 International Conference on Distributed Computing in Sensor Systems*, May 2020, pp. 442-449, 8 pgs.

- C10. U.K. Dey, **R. Akl**, R. Chataut, “High Throughput Vehicular Communication Using Spatial Multiplexing MIMO,” *IEEE CCWC 2020 The 10th Annual Computing and Communication Workshop and Conference*, January 2020, paper no. 1570613408, 6 pgs.
- C11. R. Chataut, **R. Akl**, M. Robaei, “Accelerated and Preconditioned Refinement of Gauss-Seidel Method for Uplink Signal Detection in 5G Massive MIMO Systems,” *IEEE CCWC 2020 The 10th Annual Computing and Communication Workshop and Conference*, January 2020, paper no. 1570605343, 7 pgs.
- C12. M. Robaei, **R. Akl**, “Examining Spatial Consistency for Millimeter-Wave Massive MIMO Channel Estimation in 5G-NR,” *IEEE ICCE 2020 The 38<sup>th</sup> International Conference on Consumer Electronics*, January 2020, paper no. 1570596880, 6 pages.
- C13. R. Chataut, **R. Akl**, “Channel Gain Based User Scheduling for 5G Massive MIMO Systems,” *IEEE HONET-ICT 2019 The 16th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT and AI*, October 2019, paper no. 1570565594, 5 pgs.
- C14. M. Robaei, **R. Akl**, “Time-Variant Broadband mmWave Channel Estimation Based on Compressed Sensing,” *IEEE UEMCON 2019 The 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference*, October 2019, paper no. 1570577430, 7 pages.
- C15. R. Chataut, **R. Akl**, U. Dey, “Least Square Regressor Selection Based Detection for Uplink 5G Massive MIMO Systems,” *IEEE WAMICON 2019 The 20<sup>th</sup> Annual IEEE Wireless and Microwave Technology Conference*, April 2019, paper no. 1570524727, 6 pgs.
- C16. R. Chataut, **R. Akl**, “Huber Fitting Based ADMM Detection for Uplink 5G Massive MIMO Systems,” *IEEE UEMCON 2018 The 9<sup>th</sup> Annual Ubiquitous Computing, Electronics & Mobile Communication Conference*, November 2018, paper no. 1570492416, 5 pgs.
- C17. R. Chataut, **R. Akl**, “Efficient and Low Complex Uplink Detection for 5G Massive MIMO Systems,” *IEEE WAMICON 2018 The 19th Annual Wireless and Microwave Technology Conference*, April 2018, paper no. 1570431593, 6 pgs.
- C18. R. Chataut, **R. Akl**, “Optimal Pilot Reuse Factor Based on User Environments in 5G Massive MIMO,” *IEEE CCWC 2018 The 8<sup>th</sup> Annual Computing and Communication Workshop Conference*, January 2018, paper no. 1570413394, 6 pgs.

- C19. S. Alotaibi, **R. Akl**, “Radio Resource Management in LTE Femtocell Networks,” *IEEE NCA '17 International Symposium on Network Computing and Applications*, November 2017, paper no. 117, 5 pgs.
- C20. U. Sawant, **R. Akl**, “Subcarrier Allocation in LTE Network Deployment with Mobility,” *IEEE UEMCON 2017 8<sup>th</sup> Annual Ubiquitous Computing, Electronics and Mobile Communication Conference*, October 2017, paper no. 1570349184, 8 pgs.
- C21. S. Alotaibi, **R. Akl**, “Packet Scheduling Bandwidth Type-Based Mechanism for LTE,” *IEEE UEMCON 2017 8<sup>th</sup> Annual Ubiquitous Computing, Electronics and Mobile Communication Conference*, October 2017, paper no. 1570394639, 6 pgs.
- C22. S. Alotaibi, **R. Akl**, “Dynamic Fractional Frequency Reuse (FFR) Scheme for Two-Tier Network in LTE,” *IEEE UEMCON 2017 8<sup>th</sup> Annual Ubiquitous Computing, Electronics and Mobile Communication Conference*, October 2017, paper no. 1570394969, 6 pgs.
- C23. U. Sawant, **R. Akl**, “Evaluation of Adaptive and Non Adaptive LTE Fractional Frequency Reuse Mechanisms,” *IEEE WOCC 2017 The 26th Annual Wireless and Optical Communications Conference*, April 2017, paper no. 1570341174, 6 pgs.
- C24. S. Alotaibi, **R. Akl**, “Range-Based Scheme for Adjusting Transmission Power for Femtocells in Co-Channel Deployment,” *IEEE WTS 2017 The 16th Annual Wireless Telecommunications Symposium*, April 2017, paper no. 1570334744, 5 pgs.
- C25. U. Sawant, **R. Akl**, “A Novel Metric to Study the Performance of Sectorized Fractional Frequency Reuse Techniques in LTE,” *IEEE WTS 2017 The 16th Annual Wireless Telecommunications Symposium*, April 2017, paper no. 1570338498, 7 pgs.
- C26. S. Alotaibi, **R. Akl**, “Dynamic Frequency Partitioning Scheme for LTE HetNet Networks Using Fractional Frequency Reuse,” *IEEE WCNC '17 Wireless Communications and Networking Conference*, March 2017, paper no. 1570332420, 5 pgs., demo and poster.
- C27. U. Sawant, **R. Akl**, “Performance Evaluation of Network Productivity for LTE Heterogenous Networks with Reward-Penalty Weights Assessment,” *IEEE CCWC 2017 The 7<sup>th</sup> Annual Computing and Communication Workshop Conference*, January 2017, paper no. 1570328396, 6 pgs.
- C28. S. Alotaibi, **R. Akl**, “Self-Adjustment Downlink Transmission Power for Femtocells in Co-Channel Deployment in Heterogeneous Networks,” *IEEE CCWC 2017 The 7<sup>th</sup> Annual Computing and Communication Workshop Conference*, January 2017, paper no. 1570326815, 6 pgs.

- C29. U. Sawant, **R. Akl**, “Performance Evaluation of Sectorized Fractional Frequency Reuse Techniques Using Novel Metric,” *IEEE ISCC 2016 The Twenty-First IEEE Symposium on Computers and Communications*, June 2016, paper no. 1570275270, 7 pgs.
- C30. R. Tidwell, S. Akumalla, S. Karlaputi, **R. Akl**, K. Kavi, and D. Struble, “Evaluating the Feasibility of EMG and Bend Sensors for Classifying Hand Gestures,” *1<sup>st</sup> International Conference on Multimedia and Human Computer Interaction*, July 2013, paper no. 63, 8 pgs.
- C31. **R. Akl**, K. Pasupathy, and M. Haidar, “Anchor Nodes Placement for Effective Passive Localization,” *2011 IEEE International Conference on Selected Topics in Mobile and Wireless Networks (iCOST)*, October 2011, paper no. 1569490799, pp. 127 - 132.
- C32. **R. Akl**, P. Kadiyala, and M. Haidar, “Non-Uniform Grid-Based Routing in Sensor Networks,” *9th IEEE Malaysia International Conference on Communications*, December 2009, paper no. 1569243649, pp. 536 - 540.
- C33. M. Haidar, M. Al-Rizzo, Y. Chan, **R. Akl**, M. Bouharras, “Throughput Validation of an Advanced Channel Assignment Algorithm in IEEE 802.11 WLAN,” *ICCSN 2009 – International Conference on Communication Software and Networks*, February 2009, paper no. P385, pp. 801 - 806.
- C34. **R. Akl** and D. Keathly, “Robocamp: Encouraging Young Women to Embrace STEM,” 4th Annual TETC Best Practices Conference, February 2009, 13 pgs.
- C35. M. Haidar, R. Ghimire, M. Al-Rizzo, **R. Akl**, Y. Chan, “Channel Assignment in an IEEE 802.11 WLAN Based on Signal-to-interference Ratio,” *IEEE CCECE – Canadian Conference on Electrical and Computer Engineering: Communications and Networking*, May 2008, paper no. 1569092894, pp. 1169 - 1174.
- C36. H. Al-Rizzo, M. Haidar, **R. Akl**, and Y. Chan, “Enhanced Channel Assignment and Load Distribution in IEEE 802.11 WLANs,” *IEEE International Conference on Signal Processing and Communication*, November 2007, paper no. 1569042132, pp. 768 - 771.
- C37. **R. Akl** and Y. Saravanos, “Hybrid Energy-Aware Synchronization Algorithm in Wireless Sensor Networks,” *18th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, September 2007, paper no 692, 5 pgs.
- C38. M. Haidar, **R. Akl**, and H. Al-Rizzo, “Channel Assignment and Load Distribution in a Power-Managed WLAN,” *18th Annual IEEE International Symposium on*



*Personal, Indoor and Mobile Radio Communications*, September 2007, paper no. 463, 5 pgs.

- C39. D. Keathly and **R. Akl**, “Attracting and Retaining Women in Computer Science and Engineering: Evaluating the Results,” *Proceedings of American Society for Engineering Education: ASEE Annual Conference*, June 2007, paper no. AC 2007-1229, 10 pgs.
- C40. M. Haidar, **R. Akl**, H. Al-Rizzo, Y. Chan, R. Adada, “Optimal Load Distribution in Large Scale WLAN Networks Utilizing a Power Management Algorithm,” *Proceedings of IEEE Sarnoff Symposium*, May 2007, 5 pgs.
- C41. R. Dantu, P. Kolan, **R. Akl**, and K. Loper, “Classification of Attributes and Behavior in Risk Management Using Bayesian Networks,” *Proceedings of IEEE Intelligence and Security Informatics Conference*, May 2007, pp. 71-74.
- C42. **R. Akl** and A. Arepally, “Dynamic Channel Assignment in IEEE 802.11 Networks,” *Proceedings of IEEE Portable 2007: International Conference on Portable Information Devices*, March 2007, pp 309-313.
- C43. **R. Akl** and U. Sawant, “Grid-based Coordinated Routing in Wireless Sensor Networks,” *Proceedings of IEEE CCNC 2007: Consumer Communications and Networking Conference*, January 2007, pp. 860-864.
- C44. **R. Akl** and A. Arepally, “Simulation of Throughput in UMTS Networks with Different Spreading Factors,” *Proceedings of IEEE VTC Fall 2006: Vehicular Technology Conference*, September 2006, pp. C1-5.
- C45. A. Alhabsi, H. Al-Rizzo, and **R. Akl**, “Parity Assisted Decision Making for QAM Modulation,” *International Conference on Mobile Computing and Wireless Communications*, September 2006, paper no. 1568988776, 5 pgs.
- C46. **R. Akl** and R. Garlick, “Retention and Recruitment of Women in Computer Engineering,” *ICEE 2006: International Conference on Engineering Education*, July 2006, paper no. 3318, 5 pgs.
- C47. R. Garlick and **R. Akl**, “Intra-Class Competitive Assignments in CS2: A One-Year Study,” *ICEE 2006: International Conference on Engineering Education*, July 2006, paper no. 3325, 5 pgs.
- C48. **R. Akl**, D. Tummala, and X. Li, “Indoor Propagation Modeling at 2.4 GHz for IEEE 802.11 Networks,” *WNET 2006: Wireless Networks and Emerging Technologies*, July 2006, paper no. 510-014, 6 pgs.
- C49. P. Chen, K. Kavi, and **R. Akl**, “Performance Enhancement by Eliminating Redundant Function Execution,” *Proceedings of IEEE: 39th Annual Simulation*

*Symposium*, April 2006, pp. 143-150.

- C50. **R. Akl** and S. Nguyen, "Capacity Allocation in Multi-cell UMTS Networks for Different Spreading Factors with Perfect and Imperfect Power Control," *Proceedings of IEEE CCNC 2006: Consumer Communications and Networking Conference*, January 2006, vol. 2, pp. 928-932.
- C51. W. Li, K. Kavi, and **R. Akl**, "An Efficient Non-Preemptive Real-Time Scheduling," *18th International Conference on Parallel and Distributed Computing Systems*, Las Vegas, NV, September 2005, pp. 154-160.
- C52. S. Nguyen and **R. Akl**, "Approximating User Distributions in WCDMA Networks Using 2-D Gaussian," *CCCC20T 05: International Conference on Computing, Communications, and Control Technologies*, July 2005, 5 pgs.
- C53. **R. Akl** and S. Park, "Optimal Access Point Selection and Traffic Allocation in IEEE 802.11 Networks," *Proceedings of 9th World Multiconference on Systemics, Cybernetics and Informatics (WMSCI 2005): Communication and Network Systems, Technologies and Applications*, July 2005, vol. 8, pp. 75-79.
- C54. **R. Akl**, M. Naraghi-Pour, M. Hegde, "Throughput Optimization in Multi-Cell CDMA Networks," *IEEE WCNC 2005 - Wireless Communications, and Networking Conference*, March 2005, vol. 3, pp. 1292-1297.
- C55. **R. Akl**, "Subscriber Maximization in CDMA Cellular Networks," *Proceedings of CCCT 04: International Conference on Computing, Communications, and Control Technologies*, August 2004, vol. 3, pp. 234-239.
- C56. **R. Akl** and A. Parvez, "Global versus Local Call Admission Control in CDMA Cellular Networks," *Proceedings of CITSA 04: Communications, Information and Control Systems, Technologies and Applications*, July 2004, vol. 2, pp. 283-288.
- C57. **R. Akl** and A. Parvez, "Impact of Interference Model on Capacity in CDMA Cellular Networks," *Proceedings of SCI 04: Communication and Network Systems, Technologies and Applications*, July 2004, vol. 3, pp. 404-408. Selected as **best paper** of those presented in the session: Tele-Communication Systems, Technologies and Application II.
- C58. **R.G. Akl**, M.V. Hegde, M. Naraghi-Pour, P.S. Min, "Call Admission Control Scheme for Arbitrary Traffic Distribution in CDMA Cellular Systems," *IEEE Wireless Communications and Networking Conference*, September 2000, vol. 1, pp. 465-470.
- C59. **R.G. Akl**, M.V. Hegde, M. Naraghi-Pour, P.S. Min, "Cell Placement in a CDMA Network," *IEEE Wireless Communications and Networking Conference*, September 1999, vol. 2, pp. 903-907.

- C60. **R.G. Akl**, M.V. Hegde, P.S. Min, “Effects of Call Arrival Rate and Mobility on Network Throughput in Multi-Cell CDMA,” *IEEE International Conference on Communications*, June 1999, vol. 3, pp. 1763-1767.
- C61. **R.G. Akl**, M.V. Hegde, M. Naraghi-Pour, P.S. Min, “Flexible Allocation of Capacity in Multi-Cell CDMA Networks,” *IEEE Vehicular Technology Conference*, May 1999, vol. 2, pp. 1643-1647.

### Journal Publications

- J1. R. Chataut, **R. Akl**, U.K. Dey, M. Robaei, “SSOR Preconditioned Gauss-Seidel Detection and Its Hardware Architecture for 5G and beyond Massive MIMO Networks,” *Electronics 2021 ISSN 2079-9292*, 10(5), 578, *Special Issue MIMO for Next Generation Wireless Systems*, March 2021, 17 pgs.
- J2. R. Chataut, **R. Akl**, “Massive MIMO Systems for 5G and Beyond Networks – Overview, Recent Trends, Challenges, and Future Research Direction,” *Sensors* 2020, 20(10), 2753, May 2020.
- J3. R. Chataut, **R. Akl**, “Massive MIMO Systems for 5G,” *Encyclopedia* 2020, doi:10.32545, 2020, (ISSN 2309-3366).
- J4. S. Alotaibi, **R. Akl**, “Range-Based Scheme for Adjusting Transmission Power of Femtocell in Co-Channel Deployment,” *International Journal of Interdisciplinary Telecommunications and Networking*, IJITN Vol. 10, No. 4, pgs. 14-24, 2018.
- J5. U. Sawant, **R. Akl**, “Adaptive and Non Adaptive LTE Fractional Frequency Reuse Mechanisms Mobility Performance,” *Advances in Science, Technology and Engineering Systems Journal*, ASTES Vol. 3, No. 3, 02-11, 11 pgs., 2018.
- J6. M. Haidar, H.M. Al-Rizzo, **R. Akl**, and Z. Elbazzal, “The Effect of an Enhanced Channel Assignment Algorithm in an IEEE 802.11 WLAN,” *World Scientific and Engineering Academy and Society Transactions on Communications*, WSEAS, Vol. 8, Issue 12, December 2009.
- J7. **R. Akl**, P. Kadiyala, and M. Haidar, “Non-Uniform Grid-Based Coordinated Routing in Wireless Sensor Networks,” *Journal of Sensors*, article ID 491349, volume 2009, 11 pages.
- J8. M. Haidar, M. Al-Rizzo, Y. Chan, **R. Akl**, “User-Based Channel Assignment Algorithm in a Load-Balanced IEEE 802.11 WLAN,” *International Journal of Interdisciplinary Telecommunications & Networking (IJITN)*, April-June 2009, 1(2), pp. 66-81.

- J9. **R. Akl**, D. Keathly, and R. Garlick, “Strategies for Retention and Recruitment of Women and Minorities in Computer Science and Engineering,” *iNEER Special Volume: Innovations 2007- World Innovations in Engineering Education and Research*, 9 pgs., 2007.
- J10. R. Garlick and **R. Akl**, “Motivating and Retaining CS2 Students with a Competitive Game Programming Project,” *iNEER Special Volume: Innovations 2007- World Innovations in Engineering Education and Research*, 9 pgs., 2007.
- J11. **R. Akl** and S. Nguyen, “UMTS Capacity and Throughput Maximization for Different Spreading Factors,” *Journal of Networks*, July 2006, vol. 1, issue 3, pp. 40-49. ISSN: 1796-2056
- J12. W. Li, K. Kavi, and **R. Akl**, “A Non-preemptive Scheduling Algorithm for Soft Real-time Systems,” *Journal of Computer and Electrical Engineering*, 2006, vol. 32, 18 pgs. ISSN: 0045-7906
- J13. **R. Akl**, A. Parvez, and S. Nguyen, “Effects of Interference on Capacity in Multi-Cell CDMA Networks,” *Journal of Systemics, Cybernetics and Informatics*, 2006, vol. 3, no. 1, p825612, 7 pgs. ISSN: 1690-4524
- J14. **R.G. Akl**, M. Hegde and M. Naraghi-Pour, “Mobility-based CAC Algorithm for Arbitrary Traffic Distribution in CDMA Cellular Systems,” *IEEE Transactions on Vehicular Technology*, March 2005, vol. 54, no. 2, pp. 639-651.
- J15. **R.G. Akl**, M.V. Hegde, M. Naraghi-Pour, P.S. Min, “Multi-Cell CDMA Network Design,” *IEEE Transactions on Vehicular Technology*, May 2001, vol. 50, no. 3, pp. 711-722.

## Technical Papers

- T1. J. Williams, **R. Akl**, et al, “Flight Control Subsystem,” *The Eagle Feather*, Special Section: Undergraduate Research Initiative in Engineering, University of North Texas, Vol. 7, 2010.
- T2. **R.G. Akl**, M.V. Hegde, A. Chandra, P.S. Min, “CDMA Capacity Allocation and Planning,” Technical Document, Washington University Department of Electrical Engineering WUEE-98, April 1998.

## Book Chapters

- B1. R. Akl, Y. Saravanos, and M. Haidar, “Chapter 18: Hybrid Approach for Energy-Aware Synchronization in Sensor Networks,” *Sustainable Wireless Sensor Networks*, December 2010, pgs. 413-429, ISBN: 978-953-307-297-5.
- B2. K. Kavi, **R. Akl** and A. Hurson, “Real-Time Systems: An Introduction and the

State-of-the-Art,” *Encyclopedia of Computer Science and Engineering*, John Wiley & Sons, Volume 4, January 2009, pgs. 2369-2377.

- B3. **R. Akl** and K. Kavi, “Chapter 12: Modeling and Analysis using Computational Tools,” *Introduction to Queuing Theory: Modeling and Analysis*, Birkhauser Boston, December 2008, pgs. 295-320.

### **Technical Presentations**

- P1. “Bio-Com Project,” Raytheon, Richardson TX, May 2012, (invited).
- P2. “Bio-Com Project,” Net-Centric Software and Systems I/UCRC Meeting, Denton TX, December 2011, (invited).
- P3. “Student Outreach Report: Robocamp,” College of Engineering Advisory Board Meeting, Denton TX, May 2011, (invited).
- P4. “Robocamp: Encouraging Young Women to Embrace STEM,” 4th Annual TETC Best Practices Conference, Austin TX, February 2009, (invited).
- P5. “Self-Configuring Wireless MEMS Network (demo),” Southern Methodist University, Dallas TX, January 2008, (invited).
- P6. “Energy-aware Routing and Hybrid Synchronization in Sensor Networks,” *Southern Methodist University*, Dallas TX, September 2007, (invited).
- P7. “Retention and Recruitment of Women in Computer Engineering,” *ICEE 2006: International Conference on Engineering Education*, Puerto Rico, July 2006, (refereed).
- P8. “Capacity Allocation in Multi-cell UMTS Networks for Different Spreading Factors with Perfect and Imperfect Power Control,” *IEEE CCNC 2006: Consumer Communications and Networking Conference*, Las Vegas, NV, January 2006, (refereed).
- P9. “Research, Teaching, and Outreach,” CSE Advisory Council Meeting, *UNT Research Park*, Denton, TX, December 2005, (invited).
- P10. “Wi-Fi and WCDMA Network Design,” *University of Arkansas*, Little Rock, AR, April 2005, (invited).
- P11. “Wi-Fi and WCDMA Network Design,” *Southern Methodist University*, Dallas, TX, March 2005, (invited).
- P12. “Current Research in Wireless at UNT,” *Nortel Networks*, Richardson, TX, October 2004, (invited).

- P13. "Subscriber Maximization in CDMA Cellular Networks," *International Conference on Computing, Communications, and Control Technologies*, Austin, TX, August 2004, (refereed).
- P14. "Global versus Local Call Admission Control in CDMA Cellular Networks," *International Conference on Cybernetics and Information Technologies, Systems and Applications*, Orlando, FL, July 2004, (refereed).
- P15. "Impact of Interference Model on Capacity in CDMA Cellular Networks," *8th World Multi-Conference on Systemics, Cybernetics, and Informatics*, Orlando, FL, July 2004, (refereed).
- P16. "CDMA Network Design," IEEE Communications Society – New Orleans Chapter, New Orleans, LA, May 2002, (invited).
- P17. "Cell Design to Maximize Capacity in CDMA Networks," Louisiana State University, Baton Rouge, LA, April 2002, (invited).
- P18. "Call Admission Control Scheme for Arbitrary Traffic Distribution in CDMA Cellular Systems," *IEEE Wireless Communications and Networking Conference*, Chicago, IL, September 2000, (refereed).
- P19. "Cell Placement in a CDMA Network," *IEEE Wireless Communications and Networking Conference*, September 1999, (refereed).
- P20. "Effects of Call Arrival Rate and Mobility on Network Throughput in Multi-Cell CDMA," *IEEE International Conference on Communications*, June 1999, (refereed).
- P21. "Flexible Allocation of Capacity in Multi-Cell CDMA Networks," *IEEE Vehicular Technology Conference*, May 1999, (refereed).
- P22. "CCAP: A Strategic Tool for Managing Capacity of CDMA Networks," Teleware Co. Ltd., Seoul, South Korea, 1998, (invited).

## Courses Developed

- CSCE 5933: LTE Physical Layer Using MATLAB.  
Research issues in the design of LTE physical layer and simulate using MATLAB. Topics include modulation and coding, OFDM, channel modeling, MIMO, and link adaption.
- CSCE 6590: Advanced Topics in Wireless Communications & Networks: 4G/LTE.  
Research issues in the design of next generation wireless networks: cellular systems, medium access techniques, signaling, mobility management, control and

management for mobile networks, wireless data networks, Internet mobility, quality-of-service for multimedia applications, caching for wireless web access, and ad hoc networks.

- CSCE 5933: Fundamentals of VoIP.  
Fundamentals of VoIP, with emphasis on network infrastructure implementation and security. Topics include IP protocol suite, SS7, speech-coding techniques, quality of service, session initiation protocol, and security issues.
- CSCE 5540: Introduction to Sensor Networks.  
Topics include: design implications of energy (hardware and software), and otherwise resource-constrained nodes; network self-configuration; services such as routing under network dynamics, localization, time-synchronization and calibration; distributed data management, in-network aggregation and collaborative signal processing, programming tools and language support.
- CSCE 5510. Wireless Communication.
- Point-to-point signal transmission through a wireless channel, channel capacity, channel encoding, and multi-user transmissions. First, second, and third generation cellular systems, and mobility management.
- CSCE 3510. Introduction to Wireless Communication.  
Fundamentals of wireless communications and networking, with emphasis on first, second, and third generation cellular systems. Topics include point-to-point signal transmission through a wireless channel, cellular capacity, multi-user transmissions, and mobility management.
- CSCE 3020. Communications Systems.  
Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise.
- ENEE 3583. Computer Systems Design I (UNO).  
The design process of digital computer systems is studied from the instruction set level, system architecture level, and digital logic level. Topics include machine organization, register transfer notation, processor design, memory design, and input/output considerations. Includes semester project.
- ENEE 3584. Computer Systems Design II (UNO).  
The design and evaluation of contemporary computer systems are analyzed to compare the performance of different architectures. Topics include performance metrics, computer arithmetic, pipelining, memory hierarchies, and multiprocessor systems.

- ENEE 3514. Computer Architecture Laboratory (UNO).  
Selected experiments examining programmable logic, VHDL and logic synthesis, and including a final design project, to accompany and complement the lecture course ENEE 3584. Three hours of laboratory.

## Courses Taught

### Fall 2021

- CSCE 3010.1: Signals and Systems (no evaluation yet)
- CSCE 5933.1: LTE Physical Layer Using MATLAB (no evaluation yet)
- CSCE 6950.743: Dissertation (no evaluation done)

### Spring 2021

- CSCE 2610.2: Computer Organization (4.0 / 5.0)
- CSCE 3020.1: Communication Systems (4.2 / 5.0)
- CSCE 6950.743: Dissertation (no evaluation done)

### Fall 2020

- CSCE 3010.1: Signals and Systems (4.1 / 5.0)
- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Spring 2020

- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Fall 2019

- CSCE 5933.3: LTE Physical Layer Using MATLAB (4.3 / 5.0)
- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Spring 2019

- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6940.743: Software Defined Radios (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Fall 2018

- CSCE 5933.3: LTE Physical Layer Using MATLAB (4.8 / 5.0)
- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Spring 2018

- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6940.743: Jitter-buffer Management and Interference in VoIP (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

### Fall 2017

- CSCE 5933.3: LTE Physical Layer Using MATLAB (4.9 / 5.0)
- CSCE 6940.743: 5G MIMO Systems (no evaluation done)
- CSCE 6940.743: VoLTE and VoWiFi (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)



Spring 2017

- CSCE 6950.743: Dissertation (no evaluation done)

Fall 2016

- CSCE 5933.3: LTE Physical Layer Using MATLAB (4.7 / 5.0)
- CSCE 6950.743: Dissertation (no evaluation done)

Spring 2016

- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Fall 2015

- CSCE 3010.1: Signals and Systems (5.7 / 7.0)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Spring 2015

- CSCE 5934.743: Directed Study (no evaluation done)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Fall 2014

- CSCE 3010.1: Signals and Systems (3.32 / 4.00)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)
- CSCE 6590.1: Advanced Topics in Wireless Communications & Networks: 4G/LTE (3.79 / 4.00)

Spring 2014

- CSCE 3510.1: Intro to Wireless Communication (808 – Highly Effective)
- CSCE 5510.1: Wireless Communications (808 – Highly Effective)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Fall 2013

- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)
- CSCE 6590.1: Advanced Topics in Wireless Communications & Networks: 4G/LTE (804 – Highly Effective)

Spring 2013

- CSCE 4890.743: Directed Study (no evaluation done)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6940.743: Individual Research (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Fall 2012

- CSCE 3010.1: Signals and Systems (793 – Highly Effective)
- CSCE 5540.1: Intro to Sensor Networks (814 – Highly Effective)
- CSCE 5950.743: Thesis (no evaluation done)
- CSCE 6950.743: Dissertation (no evaluation done)

Spring 2012

- CSCE 3020.1: Communication Systems (809 – Highly Effective)

- CSCE 3510.1: Intro to Wireless Communication (811 – Highly Effective)
- CSCE 5510.1: Wireless Communications (817 – Highly Effective)
- EENG 3810.1: Communication Systems (801 – Highly Effective)

#### Fall 2011

- CSCE 3010.1: Signals and Systems (793 – Highly Effective)
- CSCE 5540.1: Intro to Sensor Networks (824 – Highly Effective)

#### Spring 2011

- CSCE 3020.1: Communication Systems (820 – Highly Effective)
- CSCE 3510.1: Intro to Wireless Communication (812 – Highly Effective)
- CSCE 5510.1: Wireless Communications (812 – Highly Effective)
- EENG 3810.1: Communication Systems (826 – Highly Effective)

#### Fall 2010

- CSCE 3010.1: Signals and Systems (857 – Highly Effective)
- CSCE 5540.1: Intro to Sensor Networks (831 – Highly Effective)

#### Spring 2010

- CSCE 3020.1: Communication Systems (792 – Highly Effective)
- CSCE 3510.1: Intro to Wireless Communication (793 – Highly Effective)
- CSCE 5510.1: Wireless Communications (834 – Highly Effective)
- EENG 3810.1: Communication Systems (854 – Highly Effective)

#### Fall 2009

- CSCE 3010.1: Signals and Systems (4.40 / 5.00)
- CSCE 5540.1: Intro to Sensor Networks (4.70 / 5.00)
- EENG 2620.1: Signals and Systems (4.40 / 5.00)

#### Spring 2009

- CSCE 3020.1: Communication Systems (4.87 / 5.00)
- CSCE 3510.1: Intro to Wireless Communication (4.65 / 5.00)
- CSCE 5510.1: Wireless Communications (4.79 / 5.00)

#### Fall 2008

- CSCE 3010.1: Signals and Systems (4.91 / 5.00)
- CSCE 5540.2: Intro to Sensor Networks (4.10 / 5.00)
- EENG 2620.3: Signals and Systems (4.91 / 5.00)

#### Spring 2008

- CSCE 3020.1: Communication Systems (4.68 / 5.00)
- CSCE 3510.1: Intro to Wireless Communication (3.96 / 5.00)
- CSCE 5510.1: Wireless Communications (4.75 / 5.00)

#### Fall 2007

- CSCE 3010.1: Signals and Systems (4.57 / 5.00)
- CSCE 5540.2: Intro to Sensor Networks (4.01 / 5.00)

#### Summer 2007

- CSCE 3020.1: Fund. of Communication Theory (no evaluation done)
- EENG 3810.1: Communication Systems (no evaluation done)

#### Spring 2007

- CSCE 5510.2: Wireless Communications (4.75 / 5.00)
- CSCE 5933.6: Fundamentals of VoIP (4.70 / 5.00)

Fall 2006

- CSCE 3010.1: Signals and Systems (4.58 / 5.00)
- CSCE 5540.1: Intro to Sensor Networks (4.70 / 5.00)
- EENG 2620.1: Signals and Systems (4.58 / 5.00)

Summer 2006

- CSCE 3020.1: Fund. of Communication Theory (no evaluation done)
- CSCE 3510.21: Intro to Wireless Communications (no evaluation done)
- CSCE 5510.21: Intro to Wireless Communications (no evaluation done)
- EENG 3810.1: Communication Systems (no evaluation done)

Spring 2006

- CSCE 2610.2: Computer Organization (3.69 / 5.00)
- CSCE 3010.1: Signals and Systems (4.41 / 5.00)
- EENG 2620.1: Signals and Systems (4.41 / 5.00)

Fall 2005

- CSCE 3510.1: Intro to Wireless Communications (4.52 / 5.00)
- CSCE 5510.1: Wireless Communications (4.46 / 5.00)
- CSCE 5933.6: Intro to Sensor Networks (4.60 / 5.00)

Summer 2005

- CSCE 3010.21: Signals and Systems (no evaluation done)
- CSCE 3510.21: Intro to Wireless Communications (no evaluation done)

Spring 2005

- CSCE 3510.02: Intro to Wireless Communications (4.46 / 5.00)
- CSCI 3100.02: Computer Organization (4.14 / 5.00)

Fall 2004

- CSCE 3510.01: Intro to Wireless Communications (4.15 / 5.00)
- CSCI 4510.01: Machine Structures (4.55 / 5.00)
- CSCI 5330.02: Intro to Wireless Communications (4.05 / 5.00)

Summer 2004

- CSCI 4330.22: Intro to Wireless Communications (no evaluation done)
- CSCI 4330.23: Intro to Wireless Communications (no evaluation done)
- CSCI 5330.22: Intro to Wireless Communications (no evaluation done)

Spring 2004

- CSCI 3100: Computer Organization (4.64 / 5.00)
- CSCI 4330: Intro to Wireless Communications (4.22 / 5.00)

Fall 2003

- CSCI 4510: Machine Structures (4.49 / 5.00)
- CSCI 5330: Intro to Wireless Communications (4.83 / 5.00)

Summer 2003

- CSCI 3100: Computer Organization (no evaluation done)

Spring 2003

- CSCI 3100: Computer Organization (3.84 / 5.00)

Fall 2002

- CSCI 4510: Machine Structures (4.38 / 5.00)

## Funded Proposals

- R1. "I/UCRC Industrial Membership - Ashum Corp," 2020. Krishna Kavi (PI), Robert Akl (co-PI), **\$52,000.**
- R2. "I/UCRC Industrial Membership - Ashum Corp," 2019. Krishna Kavi (PI), Robert Akl (co-PI), **\$60,900.**
- R3. "I/UCRC Industrial Membership - Ashum Corp," 2018. Krishna Kavi (PI), Robert Akl (co-PI), **\$57,700.**
- R4. "Robotics and App Design Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$11,727. Submitted 5/5/17. Robert Akl (PI), **\$11,727.**
- R5. "I/UCRC Industrial Membership - Ashum Corp," 2017. Krishna Kavi (PI), Robert Akl (co-PI), **\$50,000.**
- R6. "UNT GenCyber Summer Program: Inspiring the Next Generation of Cyber Stars in North Texas," National Security Agency (NSA). Requested amount is \$85,000. Submitted 11/4/2016. Robert Akl (co-PI), **\$85,000.**
- R7. "App Design Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$12,900. Submitted 5/6/16. Robert Akl (PI), **\$12,900.**
- R8. "I/UCRC Industrial Membership - Ashum Corp," 2016. Krishna Kavi (PI), Robert Akl (co-PI), **\$65,000.**
- R9. "Robotics, Game and App Programming Summer Camps" under Texas Workforce Commission: Summer Merit Program. Requested amount is \$63,000. Submitted 11/16/15. Robert Akl (PI), **\$63,000.**
- R10. "App Design Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$13,998. Submitted 5/1/15. Robert Akl (PI), **\$13,988.**
- R11. "I/UCRC Industrial Membership - Ashum Corp," 2015. Krishna Kavi (PI), Robert Akl (co-PI), **\$40,000.**
- R12. "App Design Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$12,500. Submitted 5/2/14. Robert Akl (PI), **\$12,500.**
- R13. "I/UCRC Industrial Membership - Ashum Corp," 2014. Krishna Kavi (PI), Robert Akl (co-PI), **\$46,000.**

- R14. "I/UCRC Industrial Membership - Ashum Corp," 2013. Krishna Kavi (PI), Robert Akl (co-PI), **\$38,500.**
- R15. "Robotics, Game and App Programming Summer Camps" under Texas Workforce Commission: Summer Merit Program. Requested amount is \$63,000. Submitted 12/14/12. Robert Akl (PI), **\$63,000.**
- R16. "Bio-Com Project," funded by Raytheon under Net-Centric Software and Systems I/UCRC 2<sup>nd</sup> year. Requested amount is \$30,000. Submitted 5/12/12. Krishna Kavi (PI), Robert Akl (co-PI), **\$30,000.**
- R17. "Bio-Com Project," funded by Raytheon under Net-Centric Software and Systems I/UCRC. Requested amount is \$30,000. Submitted 5/12/11. Krishna Kavi (PI), Robert Akl (co-PI), **\$30,000.**
- R18. "Game Programming for Xbox 360 Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$20,000. Submitted 3/21/11. Robert Akl (PI), **\$20,000.**
- R19. "RoboCamps and Game Programming Summer Camps" under Texas Workforce Commission: Summer Merit Program. Requested amount is \$63,000. Submitted 2/17/11. Robert Akl (PI), **\$63,000.**
- R20. "Game Programming for Xbox 360 Summer Camp" under Texas Higher Education Coordinating Board: Engineering Summer Program. Requested amount is \$13,000. Submitted 2/22/10. Robert Akl (PI), **\$18,000.**
- R21. "Robotics and Game Programming Summer Camps" under Texas Workforce Commission: Summer Merit Program. Requested amount is \$63,000. Submitted 10/16/09. Robert Akl (PI), **\$63,000.**
- R22. "Micro Air Vehicle Design: A Collaborative Undergraduate Project for Electrical Engineering, Computer Engineering, and Computer Science Students," under UNT Undergraduate Research Initiative. Submitted 9/25/2009. Robert Akl (co-PI), **\$8,000.**
- R23. "Summer Merit Program" under Texas Workforce Commission. Requested amount is \$42,000. Submitted 3/20/09. Robert Akl (PI), **\$42,000.**
- R24. "Robocamp at Stewpot" under Dallas Women's Foundation. Requested amount is \$20,000. Submitted 2/23/09. Robert Akl (PI), **\$18,600.**
- R25. "Robocamp Jump Start" under Motorola Foundation Innovation Generation Grant. Requested amount is \$29,852. Submitted 2/12/09. Robert Akl (PI), **\$30,700.**

- R26. “Engineering Summer Program” under Texas Higher Education Coordinating Board. Requested amount is \$7,944. Submitted 2/13/09. Robert Akl (PI), **\$11,111**.
- R27. “Texas Youth in Technology” under Texas Workforce Commission. Requested amount is \$152,393. Submitted 11/10/08. Robert Akl (PI), **\$152,393**.
- R28. “I/UCRC Center Proposal: Net-Centric Software and Systems,” under NSF-07-537: Industry/University Cooperative Research Centers. Requested amount is \$349,482. Submitted 9/26/08. Krishna Kavi (PI), Robert Akl (co-PI), **\$60,000 per year for 5 years**.
- R29. “Robocamp and Beyond” under Motorola Foundation Innovation Generation Grant. Requested amount is \$30,000. Submitted 6/20/08. Robert Akl (PI), **\$30,000**.
- R30. Texas Youth in Technology” under Texas Workforce Commission. Requested amount is \$30,000. Submitted 2/27/08. Robert Akl (PI), **\$31,500**.
- R31. “Robocamp Program for Young Women” under RGK foundation. Requested amount is \$30,000. Submitted 11/5/07. Robert Akl (PI), **\$15,000**.
- R32. “Texas Youth in Technology” under Texas Workforce Commission. Requested amount is \$102,514. Submitted 10/22/07. Robert Akl (PI), **\$102,514**.
- R33. “Women Art Technology” under Hispanic and Global Studies Initiatives Fund. Requested amount is \$14,125. Submitted 9/30/07. Jennifer Way (PI), Robert Akl (co-PI), **\$12,785**.
- R34. “Robocamp Mobile Unit” under Motorola Foundation Innovation Generation Grant. Requested amount is \$35,000. Submitted 6/20/07. Robert Akl (PI), **\$30,000**.
- R35. “ICER: UNT Engineering Challenge Camps” under NSF 0547299. Requested amount is \$35,000. Submitted 4/27/07. Oscar Garcia (PI), Robert Akl (senior personnel), **\$32,792**.
- R36. “I/UCRC-Planning Proposal: UNT Research Site Proposal to join Embedded Systems I/UCRC,” under NSF-01-116: Industry/University Cooperative Research Centers. Requested amount is \$10,000. Submitted 3/31/07. Krishna Kavi (PI), Robert Akl (co-PI), **\$10,000**.
- R37. “High-assurance NCCS: Ultra Dependability Integration Engineering,” Department of Defense. Requested amount is \$20,000. Submitted 3/12/07. Krishna Kavi (PI), Robert Akl (co-PI), **\$20,000**.

R38. “Recruiting and Retention Strategies for Computer Science at UNT” under Texas Technology Workforce Development Grant Program – 2005. Requested amount is \$163,322. Submitted 3/17/05. Robert Akl (PI), **\$125,322**.

R39. UNT Faculty Research Grant for Fall 2003, Robert Akl (PI), \$5,000, **\$4,000**.

R40. UNT Junior Faculty Summer Research Fellowship for Summer 2003, Robert Akl (PI), \$5,000, **\$5,000**.

## **Professional Associations and Achievements**

### **Membership in Professional Organizations**

- Senior Member IEEE
- Member, Federation Council of North Texas Universities
- Member, Eta Kappa Nu Electrical Engineering Honor Society
- Member, Golden Key National Honor Society
- Member, Tau Beta Pi Engineering Honor Society

### **Offices and Committee Assignments in Professional Organizations**

- Technical Program Committee Member, IEEE Wireless Communications and Networking Conference, IEEE WCNC
- Technical Program Committee Member, International Wireless Symposium, IWS
- Technical Program Committee Member, IEEE International Conference on Computational Science, IEEE ICCS
- Technical Program Committee Member, IASTED International Conference on Wireless Communications, WC
- Technical Program Committee Member, WTS Wireless Telecommunications Symposium
- Technical Program Committee Member, Mosharaka International Conference on Computer Science and Engineering, Amman
- Invitation to serve as an NSF reviewer/panelist for Engineering Research Centers (ERC) proposals
- Technical Program Committee Member, 18th IEEE International Symposium on Personal, Indoor and Mobile Radio Communication, Greece
- International Program Committee, IASTED International Conference on Wireless and Optical Communication, Canada
- Program Committee Member, Fifth Annual Wireless Telecommunications Symposium, CA
- Technical Publications Chair, IEEE Vehicular Technology Conference, Dallas TX
- Session Chair, International Conference on Computing, Commun. and Control Tech., Austin TX
- Session Chair, International Conference on Cybernetics and Information Technologies, Orlando FL

- Session Chair, 8th World Multi Conference on Systemics, Cybernetic, and Informatics, Orlando FL

### **Additional Responsibilities and Activities**

- Reviewer, *Wireless Communications and Mobile Computing*, 2012 – present
- Reviewer, *Journal of Sensor and Actuator Networks*, 2012 – present
- Reviewer, *IEEE Transactions on Vehicular Technology*, 2011 – present
- Reviewer, *Elsevier Journal of Computers & Electrical Engineering*, 2008 – present
- Reviewer, *IEEE Globecom*, 2007 – present
- Reviewer, *IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS)*, 2008 – present
- Reviewer, *The International Wireless Communications and Mobile Computing Conference*, 2007 – present
- Reviewer, *Journal on Wireless Communications and Networking*, 2007 – present
- Reviewer, *IEEE Transactions on Communications*, 2007 - present
- Reviewer, *International Journal of Communication Systems*, 2007 – present
- Reviewer, *IEEE Communications Magazine*, 2005 – present
- Reviewer, *Journal of Wireless Networks*, 2004 – present
- Reviewer, *IEEE Transactions on Mobile Computing*, 2004 – present
- Reviewer, *IEEE Transactions on Wireless Communications*, 2004 – present
- Reviewer, *ACM Crossroads*, 2004 – present

### **Honors and Awards**

- Who's Who in America, 2012 Edition
- Winner of Tech Titan of the Future – University Level Award for UNT Robocamps for Girls, Metroplex Technology Business Council, 2010 with **\$15,000 cash prize**.
- IEEE Professionalism Award, Ft Worth Chapter, 2008
- UNT College of Engineering Outstanding Teacher Award, 2008
- Certificate of Appreciation: IEEE Vehicular Technology Conference, Dallas, TX, 2005
- Certificate of Appreciation: Denton County Boosting Engineering, Science and Technology (BEST) Robotics Competition, 2004
- Summa Cum Laude Graduate, Ranked First in Undergraduate Class
- The Computer Science Departmental Award for Academic Excellence, Washington University, 1993
- The Dual Degree Engineering Award for Outstanding Senior, Washington University, 1993
- The 1992 Technical Writing Competition Award, The Society for Technical Communication