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AUTOALERT, INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

AUTOALERT, INC.,	}	Case No. SACV 13-00657 SJO (JPRx)
Plaintiff,		DECLARATION OF DR. JAIME G. CARBONELL IN SUPPORT OF AUTOALERT, INC.'S OPENING CLAIM CONSTRUCTION BRIEF
v.		
DEALERSOCKET, INC.,		
Defendant.		
AND RELATED COUNTERCLAIMS		Markman Hearing: Date.: June 2, 2014 Time: 10:00 a.m. Ctvm: 1, 2nd Floor The Hon. S. James Otero

1 I, Jaime G. Carbonell, hereby declare as follows:

2 1. I have personal knowledge of the matters set forth below, and if
3 called upon to testify I could and would testify competently to them.

4 2. I am the Allen Newell Professor of Computer Science at Carnegie
5 Mellon University, and I have been retained by AutoAlert, Inc. to provide expert
6 opinions on the technology at issue in this lawsuit.

7 3. I submit this declaration in support of AutoAlert's opening brief on
8 claim construction. I reserve the right to supplement or amend this declaration as
9 may be necessary and appropriate if additional information that affects my
10 opinions becomes available to me.

11 **A. Background and Qualifications**

12 4. Provided below is a brief overview of my background and
13 qualifications. A more complete presentation is set forth in my curriculum vitae,
14 which is attached to this declaration as **Exhibit A**.

15 5. I received Bachelor of Science degrees in both Physics and
16 Mathematics in 1975 from the Massachusetts Institute of Technology. I received
17 M.S., M.Phil., and Ph.D. degrees in Computer Science from Yale University in
18 1976, 1977, and 1979, respectively.

19 6. I have held the position of Allen Newell Professor of Computer
20 Science at Carnegie Mellon University from 1995 to the present. I first joined
21 Carnegie Mellon as an Assistant Professor of Computer Science in 1979. In
22 1987, I was appointed as a Professor of Computer Science at Carnegie Mellon.

23 7. Since 1979 I have taught a wide variety of graduate and
24 undergraduate courses at Carnegie Mellon that fall within the general field of
25 Computer Science, including courses in software engineering, data mining,
26 information retrieval, and web-based architectures.

27 8. I have been involved in a number of different professional
28 organizations and activities, including memberships in the Association of

1 Computing Machinery (“ACM”), the Association for the Advancement of
2 Artificial Intelligence (“AAAI”), and the Cognitive Science Society. I have also
3 held leadership positions within professional organizations. From 1983 to 1985, I
4 served as Chair of the ACM’s Special Interest Group on Artificial Intelligence
5 (“SIGART”). From 1988 to the present, I have been a Fellow of the AAAI.
6 From 1990 to 1992, I served on the AAAI executive committee.

7 9. I received a “recognition of service” award from the Association for
8 Computing Machinery for my role as chair of SIGART between 1983 and 1985.
9 In 1986, I received the Sperry Fellowship for excellence in artificial intelligence
10 research. In 1987, I received the Carnegie Mellon University Computer Science
11 Department’s teaching award.

12 10. I have also worked as a technical consultant on Computer Science
13 applications for a variety of industrial clients. This includes consulting on data
14 mining applications for Industrial Scientific Corporation (data mining to improve
15 workplace safety); Carnegie Group Inc. (financial data mining); Citicorp
16 (financial data mining); Wisdom Technologies (financial optimization and data
17 mining for corporate treasuries); Dynamix Technologies (large-scale data mining
18 engine with applications to Homeland Security); Peak Strategy (financial data
19 mining); The Boeing Company (designed their intensive data mining course); and
20 Citibank (financial data mining). My consulting services relating to data mining
21 have included such applications as financial data mining, transactional fraud
22 detection, instant-credit bad-debt minimization, collection effectiveness, cash-
23 flow optimization (sweep/invest/float), data mining for risk/cost tradeoff
24 minimization (FX, interest rate, counterparty, debt). During my consulting
25 engagements, I have designed or co-designed three data mining engines, and I
26 have evaluated and helped to improve many other data mining engines, including
27 improving the machine learning algorithms at their core.

28 / / /

1 **B. The Meaning of Certain Claim Terms**

2 11. I have reviewed the five patents being asserted in this case, and the
3 file histories associated with those patents.

4 12. I understand that the following fourteen claim terms have been
5 identified as potentially in need of construction: (1) “alert,” (2) “amount due,”
6 (3) “available,” (4) “batch process,” (5) “comparison criteria,” (6) “configuration
7 request,” (7) “current information,” (8) “different respective time periods,”
8 (9) “if,” (10) “in real-time,” (11) “message,” (12) “payoff amount,” (13) “second
9 vehicle,” and (14) “when.” Most of the claim terms on this list are not technical
10 in nature. Three of the terms are technical in nature. Below I address the
11 meanings of those three terms.

12 **1. “Configuration request”**

13 13. The term “configuration” is a known term in the field of computer
14 science. In the context of computer software, the term “configuration” is used to
15 refer either to how software modules are connected to each other or to the
16 selection or setting of attributes associated with the software. In the context of the
17 patents-in-suit, the latter meaning is applicable: selection or setting of attributes
18 associated with the software. To a person of ordinary skill in the art in the field of
19 the AutoAlert patents at the time of the invention, considering each of the patents
20 in its entirety, the term “configuration request” as used in the claims means “a
21 request to the computer system that is configurable to define the scope of the
22 request” where configurable means having attributes that are selected or set.

23 **2. “Batch process”**

24 14. The term “batch process” is a known term in the field of computer
25 science, where it has the meaning “a computer process performed on accumulated
26 data that executes without manual or other human intervention.” A batch process
27 may be executed once, or periodically.

28 ///

1 15. To a person of ordinary skill in the art in the field of the AutoAlert
2 patents at the time of the invention, considering each of the patents in its entirety,
3 the term “batch process” is used in the claims with its ordinary meaning as
4 understood in the field of computer science.

5 **3. “In real-time”**

6 16. The term “real-time” is a known term in the field of computer
7 science, where it has the meaning “pertaining to a mode of operation in which
8 computation is performed during the actual time that an external process occurs,
9 in order that the computation results can be used to respond in a timely manner to
10 the external process.” Said external process may be a user waiting for a response,
11 or other systems or processes that need a timely response.

12 17. To a person of ordinary skill in the art in the field of the AutoAlert
13 patents at the time of the invention, considering each of the patents in its entirety,
14 the term “in real-time” is being used in the claims with its ordinary meaning as
15 understood in the field of computer science.

16 **4. Compatibility of the terms “batch process” and “in real-time”**

17 18. A “batch process” can be, but need not be, performed “in real-time.”

18 19. For a process to be “in real-time,” computations must take place
19 quickly enough so that the computation results can be used to respond in a timely
20 manner to an external process. If the computations associated with a batch
21 process occur rapidly enough that its computation results can be used to respond
22 in a timely manner to an external process, that batch process is also in real-time.

23 20. In some contexts, when an external process includes rapid changes
24 (such as the second-to-second fluctuations of the stock market), the computations
25 associated with a batch process would typically not occur rapidly enough that its
26 results could be used to respond in a timely manner to the external process. In
27 those contexts, the batch process would not be in real-time.

28 / / /

1 21. In the AutoAlert patent claims, the term “real-time” is used in
2 connection with the retrieving of information associated with customer
3 information, first vehicle information, first financial terms that a customer has for
4 a first vehicle, second vehicle information, and second financial terms that a
5 customer has for a second vehicle. The information in question does not change
6 rapidly (unlike the stock market), but rather gradually, on the time scale of a day,
7 a week, or a month. These time scales are long enough to allow processing to be
8 performed “in real-time” as a “batch process.”
9

10 I declare under penalty of perjury under the laws of the United States of
11 America that the foregoing is true and correct.

12 Executed on April 13, 2014 in Pittsburgh, Pennsylvania.

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Jaime G. Carbonell

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EXHIBIT A

Jaime G. Carbonell -- Curriculum Vita

Business Address

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Carnegie Mellon University
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Fax: (412) 268-6298
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Personal: Born: July 29, 1953. Citizenship: USA

Academic and Professional Positions Held

2012 - Present	University Professor, School of Computer Science, Carnegie Mellon University
1996 - Present	Director, Language Technologies Institute, Carnegie Mellon University
1995 - Present	Allen Newell Professor of Computer Science, Carnegie Mellon University
2006 - Present	Adjunct Faculty, Dept of Computational Biology, U Pittsburgh Medical School.
2003 - 2009	Chief Scientist, Meaningful Machines Inc.
2001 - 2011	Co-Founder, Board chairman, Carnegie Speech Incorporated
1995 - 2003	Co-Founder, Board chairman, Wisdom Technologies Corporation
1986 - 1996	Director, Center for Machine Translation, Carnegie Mellon University
1987 - 1995	Professor of Computer Science, Carnegie Mellon University
1983 - 1987	Associate Professor of Computer Science, Carnegie Mellon University
1983 - 1996	Co-Founder, Director, Scientific advisor, Carnegie Group Inc.
1979 - 1983	Assistant Professor of Computer Science, Carnegie Mellon University
1975 - 1978	Research Fellow in Computer Science, Yale University
1975 - 1977	Teaching Assistant in Computer Science, Yale University
1974 - 1975	Research Assistant, Center for Space Research, MIT
1971 - 1975	Research Programmer, Artificial Intelligence, BBN, Cambridge, MA

Education

1975 - 1979 Yale University	PhD 1979 – Computer Science MPhil 1977 - Computer Science MS 1976 - Computer Science
1971 - 1975 Massachusetts Institute of Technology	SB 1975 - Physics SB 1975 - Mathematics

Professional Organizations and Activities

Member: ACM (elected Chair of SIGART 1983-85), ACL, AAAI (AAAI Fellow 1988-present, AAAI executive committee 1990-92), Cognitive Science Society, Sigma Xi, AMTA.

Government Committees: NSF/CISE Scientific Advisory Committee (2010-present), NIH Human Genome Scientific Advisory Committee, aka "Watson Committee" (1988-1992). DFKI (National German AI Lab) Scientific Advisory Board (1988-2003). National Institute of Standards and Technology (NIST/IAD), Scientific Advisory Committee (1997-2001), DOE Oakridge National Laboratories Scientific Advisory Committee (1985-1987), GMD/IPSI Information Sciences (Germany) Scientific Advisory board (1990-2001), Citigroup Technology Advisory committee (1987-1995).

Book Series co-Editor: *Lecture Notes in Artificial Intelligence* North American editor, Springer (1996-2008).

Editorial Boards: Machine Learning Journal (1984-2000, editor-in-chief 1988-1993), Machine Translation Journal (1980's), Artificial Intelligence Journal (1984-2008).

Other Accomplishments

Research: Invented multiple well-known algorithms and methods in statistical machine learning and including: Proactive Machine Learning (with Donmez) for multi-source cost-sensitive active learning, Linked Conditional Random Fields (L-SCRF, with Liu) for predicting tertiary and quaternary protein folds, Maximal Marginal Relevance (MMR, with Goldstein) for information novelty, retrieval and summarization, topic-conditioned

modeling for novelty detection, symmetric optimal phrasal alignment method for trainable example-based and statistical machine translation, series-anomaly modeling for financial fraud detection and syndromic surveillance, knowledge-based interlingual machine translation (and later extended it with colleagues: Tomita, Nirenburg, Nyberg, and Mitamura), transformational analogy for case-based reasoning, derivational analogy for reconstructive justification-based reasoning (with Veloso), robust case-frame parsing (with Hayes), Seeded Version-Space Learning (with polynomial complexity), and developed improvements to several other machine learning algorithms. Current research foci include robust statistical learning and mapping protein sequences to 3D structure and inferring functional properties, automated transfer-rule learning for Machine Translation, , enriched active transfer learning context-based machine translation, and machine translation for very rare languages.

Software artifacts: Protein structure prediction software (with Liu), active and proactive learning algorithms (with Donmez), PRODIGY general-purpose planner (with Minton and Veloso), KANT knowledge-based machine translation (with Nyberg and Mitamura), JAVELIN Question-Answering system (with Nyberg et al), CONDOR search engine (with Callan et al), MMR summarizer engine (with Goldstein), POLITICS simulated reasoning engine, DIPLOMAT speech-MT (with Frederking et al), EBMT example-based general purpose MT (with Brown), SMOKEY distributed sensor-based fire detection and suppression system, and several others.

Education: Created the PhD program at CMU on Language Technologies with 100 PhD candidates presently enrolled. Created new courses in Language Technologies, Machine learning, Data Mining and eCommerce. Edited 3 books on Machine Learning. Created multiple industrial intensive tutorials. Taught undergraduate and graduate courses in Artificial Intelligence, Machine Learning, Software Engineering, Natural Language Processing, Language Technologies, Data Mining, Information Retrieval, Web-Based Architectures, Machine Translation, Algorithms, and related Computer Science topics.

Other initiatives: Created the Center for Machine Translation at CMU in 1986, and the Language Technologies Institute in 1996. Co-creator & co-director of the Universal Library and million-book project (US, China, India). MT Summit chair 1991, Co-designer of interactive pinpointing speech tutor. Co-creator & co-PI of new Computational Biolinguistics Initiative at CMU.

Industrial Consulting: Meaningful Machines (participated in designing the context-based machine translation methods, 2002-2009), Industrial Scientific (data mining to improve workplace safety, 2008-present), Carnegie Speech Inc. (business and technology strategy for intelligent language tutoring, 2002-present) Carnegie Group Inc (expert systems & financial data mining: 1984-1997), Citicorp (financial data mining, real time transactions, new IT technology insertion: 1990-1998), Lycos Inc. (launching the internet search engine 1998-1999), Vivisimo (2003-2006, scientific advisory board), Searchline (launched the new search engine, 2002-2004), Wisdom Technologies (financial optimization and data mining for corporate treasuries, large banks, etc. 1995-2003), Dynamix Technologies (designed their large-scale data mining engine with applications to Homeland Security, AR/AP financial optimization, transactional optimization in bond trading and in re-insurance, pattern discovery in network-wire-transfer streams, syndromic surveillance, etc. 2000-present), Peak Strategy (financial analytics, investment, mining, 2005-2007), Boeing (designed their intensive data mining course), Citibank (technology advisory board for 10 years, focusing on text and data mining, fraud detection, optimization methods, etc.), plus about 10 other shorter-term engagements in data mining in industry, including financial data mining: transactional fraud detection, instant-credit bad-debt minimization, collection effectiveness, cash-flow optimization (sweep/invest/float), data mining for risk/cost tradeoff minimization (FX, interest rate, counterparty, debt, etc), and so on. During these engagements process I designed or co-designed three data mining engines, and evaluated and help improve numerous other data mining engines, including the machine learning algorithms at their core.

Miscellaneous: Gave over 500 invited or refereed-paper presentations (colloquia, seminars, panels, addresses, conferences, key-notes, etc.). Received the *IJCAI Best Paper Award* in 1997 for translingual information retrieval. Received the CMU Computer Science Department's teaching award (1987), the Sperry Fellowship for excellence in AI research (1986), unsolicited gifts from Alcoa and Hughes corporations for research in machine learning, and a "recognition of service" award from the ACM for the SIGART presidency (1983-1985). Provided congressional testimony on machine translation (1990). Leader of the NSF/JTEC study group on Japanese machine translation science and technology (1990-91). Principal investigator or major participant in research grants and contracts totaling over 90 million dollars since 1979 at the CMU School of Computer Science, Center for Machine Translation, and Language Technologies Institute.

Expert witness: Provided expert testimony and depositions, expert reports, advice, consulting, etc. in several cases involving intellectual property including: software design and copyrights, patents for data mining, patents for search engine algorithms and methods, speech recognition, integrated software systems, computational and statistical applications in finance, statistical machine learning, text mining, text processing, natural language, etc.

Patents: Inventor in several issued patents, provided advice on patentability of new software and methods, helped draft software-related patents, conducted prior art searches, composed responses to patent examiners, evaluated validity of issued patents. As expert witness provided opinions and reports on patent infringement, patent validity (anticipation, obviousness), claim constructions, Inter Partes Reviews, etc.

PhD Advisees & co-Advisees

1. Masaru Tomita, Professor and Dean, Keio University, Computer Science and Biology
2. Steven Minton, USC-ISI & CTO of Fetch Inc
3. Manuela Veloso, Professor, CMU Computer Science
4. Jack Mostow, Research Professor, CMU Robotics
5. Michael Mauldin, Founder of Lycos Inc. (and former faculty at CMU)
6. Oren Etzioni, Professor, U of Washington (and founder of Metacrawler)
7. Robert Frederking, Sr. System Scientist, CMU Language Technologies Institute
8. Alex Hauptmann, Research Professor, CMU Computer Science
9. Klaus Gross, Chief Scientist, Haley Enterprises
10. Wei-Min Shen, USC-ISI and faculty at USC Computer Science
11. Eric Nyberg, Professor, CMU Language Technologies Inst
12. Ralf Brown, Sr. System Scientist, CMU Language Technologies Institute
13. Craig Knoblock, USC-ISI and faculty at USC Computer Science
14. Akira Ushioda, Fujitsu Labs, Manager Language Technologies
15. Mark Perlin, CEO Cybergenetics
16. Daniel Kuokka, Senior researcher, Tektronix
17. Yolanda Gil, USC-ISI, senior researcher
18. Xuemei Wang, Lockheed Martin & ISLE Computing
19. Robert Joseph, Verizon Communication, senior researcher
20. Jill Fain-Lehman, Founder of Autism Technology
21. Eugene Fink, Senior Sys Scientist CMU (formerly Asst Prof, U of Florida)
22. Angela Kennedy, President Carnegie Speech (formerly CEO Wisdom Technologies)
23. Alicia Perez, Faculty at Universidad Catolica de Salta, Argentina
24. Jim Blythe, Researcher, USC-ISI
25. Yan Qu, Senior Researcher, Oracle Corp
26. Jade Goldstein, US DoD research laboratory
27. Boyan Onyskevich, US DoD research laboratory, senior manager
28. Michael Mateas, Faculty, University of CA.
29. Kathreina Probst, Faculty at Georgia Tech
30. Yan Liu, Faculty at University of Southern Cal.
31. Lucian Lita, Siemens Princeton Research Lab
32. Paul Bennett, Microsoft Research Labs
33. Chun Jin, AT&T Research
34. Ariadna Font-Llitos, IBM, Big Data Labs
35. Ulas Bardak, Postdoctoral fellow, Tokyo University
36. Christian Monson, Oregon Graduate Institute
37. Cenk Gizen, Fetch Inc. Los Angeles
38. Monica Rogati, Linked-In, manager of R&D
39. Vasco Pedro, CEO of Bueda Inc.
40. Meryem Pinar Donmez, Salesforce R&D
41. Jingrui He, Faculty, Stevens Institute
42. Jae-Dong Kim, Google Pittsburgh
43. Rashmi Gangadharaiah, Microsoft Research Labs
44. Oznur Tastan, Microsoft Research Labs
45. Jonathan Elsas, Google Pittsburgh
46. Vamshi Ambati, AT&T Research
47. Mehrbod Sharifi, Google Pittsburgh.
48. Ravi Starzl. CMU faculty
49. Xi Chen, UC Berkeley Postdoc, then NYU Faculty
50. Balakrishnan, Sevaraman, UC Berkeley Postdoc.
51. Liu Yang, CMU Postdoc.

EXHIBIT A

Publications

1. Kshirsagar, M., Carbonell, J. and Klein-Seetharaman, J., "Multi-Task Learning for Host-pathogen Protein Interactions", *Proc of ISMB 2013 and Bioinformatics*, 2013.
2. Yang, L., Blum, A., and Carbonell, J. "Learnability of DNF with Representation-Specific Queries." *Innovations in Theoretical Computer Science (ITCS)*, 2013.
3. Uguroglu, S, and Carbonell, J. "Active Learning with Maximum Mean Discrepancy for Highly Skewed Datasets." *Proc. of ICML*, 2013. (Submitted).
4. Flanigan, J., Dyer, C., and Carbonell, J., "Large-Scale Discriminative Training for Statistical Machine Translation Using Held-Out Line Search", *Proc. of North American AC (NAACL)*, 2013.
5. Duneitz, J., Levin, L, and Carbonell, J., "The Effects of Lexical Resource Quality on Preference Violation Detection", *Proc. of North American AC (NAACL)*, 2013.
6. Starzl, R., Brandacher, G., Lee, A., Carbonell, J., Zhang, W. Schnieder, J. Gorantla, B. Schneeberger, S., Zheng, X. "Review of the Early Diagnoses and Assessment of Rejection in Vascularized Composite Allotransplantation", *Clinical and Developmental Immunology*, Article ID 402980, 2013.
7. Starzl, R., Wolfram, D., Samora, R. Jefferson, B., Barclay, D., Ho, C., Brandacher, G., Schneeberger, S., Lee, A, Carbonell, J., Bodovitz, Y., "Tissue-Specific Patterns of Caspase-1 and Cytokines in Excisional Wounds are Altered by Shock in Skin and Muscle", *Journal of Critical Care*, Vol 28, Issue 1, 2013.
8. Chen, X., Liu, H., and Carbonell, J., "Structured Sparse Canonical Correlation Analysis", *International Conf, on AI and Statistics (AISTATS)*, 2012.
9. Yang, L. Hanneke, S. and Carbonell, J., "A Theory of Transfer Learning with Applications to Active Learning," *Machine Learning Journal*, 2012, DOI: 10.1007/s10994-012-5310-y
10. Chen, X., He, J., Lawrence, R., and Carbonell, J., "Adaptive Multi-Task Sparse Learning with an Application to fMRI Study", *SIAM International Conference on Data Mining (SDM)*, 2012.
11. Chen, X., Lin, Q., Kim, S., Carbonell, J., Xing, E., "Smoothing Proximal Gradient Method for General Structured Sparse Learning", *Annals of Applied Statistics*, 2012. (Full version.)
12. Ambati, V., Vogel, S. and Carbonell, J., "Collaborative Workflow for Crowdsourcing Translation", *Proc of ACM Conference on Computer Supported Cooperative Work*, Washington, USA. 2012.
13. Kshirsagar, M., Carbonell, J. and Klein-Seetharaman, J., "Transfer learning based methods towards the discovery of host-pathogen protein-protein interactions" *Proc of ISMB*, 2012.
14. Kshirsagar, M., Carbonell, J. and Klein-Seetharaman, J., "Techniques to cope with missing data in host-pathogen protein interaction prediction" *J of Bioinformatics* 2012 (also presented at ECCB 2012).
15. Starzl R, Zhang W, Wang Y, Brandacher G, Schneeberger S, Gorantla V, Carbonell J, Barclay D, Vodovotz Y, Zheng XX. "Inflammatory Biomarker Patterns Identify Specific Types of Rat Skin Rejection." *3rd International Conference on Transplantomics and Biomarkers in Organ Transplantation*. March 2012.
16. Starzl R, Zhang W, Wang Y, Brandacher G, Schneeberger S, Gorantla V, Carbonell J, Barclay D, Vodovotz Y, Zheng XX. "Distinctive Immune Signaling Patterns and Factors in Rat Skin Rejection." *American Transplant Congress*. June 2012.
17. Fu, B., Fink, E., Gibson, G., and Carbonell J., "Indexing and Fast Near-Matching of Billions of Astronomical Objects", *Proc. of IASDS*, 2012.
18. Fu, B., Fink, E., Gibson, G., and Carbonell J., "Exact and Approximate Computation of a Histogram of Pairwise Distances between Astronomical Objects", *Proc of AstoHPC*, 2012.

19. Uguroglu, S., M. Doyle, R. Biedermann, J. Carbonell. "Cost-sensitive Risk Stratification in the Diagnosis of Heart Disease." *Proc of IAAA*, 2012.
20. Yang, L., and Carbonell, J. "Buy-in-Bulk Active Learning." *Tech report CMU-ML-12-110.*, 2012.
21. Yang, L. Hanneke, S., and Carbonell, J." Bounds on the Minimax Rate for Estimating a Prior over a VC Class from Independent Learning Tasks". *Tech report CMU-ML-12-112.*, 2012.
22. Balakrishnan, S., Kamisetty, H., Carbonell, J., Lee, S., Langmead, C., "Learning Generative Models for Protein Fold Families", *Proteins*, Vol 79, Issue 4, pp 1061-1078, 2011,
23. Chen, X., Qi, Y., Bai, Q., Carbonell, J. "Sparse Latent Semantic Analysis", *Proc of SIAM International Conference on Data Mining (SDM)*, 2011.
24. Chen, X., Lin, Q., Kim, S. Carbonell, J. Xing, P. "Smoothing Proximal Gradient Method for Generalized Structure Learning" *Proc of Uncertainty in Artificial Intelligence Conference (UAI)*, 2011. (Short version)
25. Yang, L, Hanneke, S., Carbonell, J. "The Identifiability of Priors from Bounded Sample Sizes with Applications to Transfer Learning", *Proc of the 24th Proc of the Annual Conference on Learning Theory (COLT)*, Budapest, 2011.
26. Yang, L. Hanneke, S., Carbonell, J., "The Sample Complexity of Self-Verifying Bayesian Active Learning", *Proc of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2011.
27. Uguroglu, S, and J. Carbonell. "Feature Selection for Transfer Learning." *Proc of ECML/PKDD* (3) 2011. 430-442.
28. Kshirsagar, M., Zhao, Z., Iia, J m Tastan, O., Singh, I., Carbonell, J. and Klein-Seetharaman, J., "Virus Interactions with Huamn Signal Transduction Patterns", *International Jouinral of Computational Biology and Drug Design* (4(1): 83-105, 2011.
29. Ambati, V., Vogel S., and Carbonell, J., "Multi-Strategy Approaches to Active Learning for Statistical Machine Translation", *Proc of the the 13th Machine Translation Summit*, Xiamen, China. 2011
30. Ambati, V., Hewavitharana, S., Vogel, S., Carbonell, J., "Active Learning with Multiple Annotations for Comparable Data Classification Tasks", *Proc of Comparable Corpora workshop of ACL*, 2011.
31. Ambati V., Vogel, S., Carbonell, J. "Towards Task Recommendation in Micro-Task Markest", *Proc of 3rd Workshop on Human Computation of AAAI*, 2011.
32. Gopal, S., Yang, Y., Salomatin, K, and Carbonell, J., "Statistical Learning for file-type Identification," *International Conference on Machine Learning Applications (ICMLA)*, 2011.
33. Balakrishnan S., Tastan O., Carbonell J., and Klein-Seetharaman J., "Alternative Paths in HIV-1 Targeted Human Signal Transduction Pathways." *BMC Genomics*, Vol. 10. 2010. (Shorter version in *International Conference on Bioinformatics*, 2009.)
34. Balakrishnan, S., Kamisetty, H, Carbonell, J., Lee, S. and Langmead, C., "Learning Networks of Statistical Couplings in Protein Fold Families using L1-regularization", *Proc. of Structural Bioinformatics and Computational Biophysics*, 2010.
35. He, J., and Carbonell, J. "Co-Selection of Features and Instances for Unsupervised Rare Category Analysis." *Proceedings of the SIAM International Conference on Data Mining*, Columbus, OH 2010
36. Donmez, P., Carbonell, J., Schneider, J., "A Probabilistic Framework to Learn from Multiple Annotators with Time-Varying Accuracy", *Proceedings of the SIAM International Conference on Data Mining*, Columbus, OH 2010.
37. Donmez, P. and Carbonell, J. "From Active to Proactive Learning" in *Advances in Machine Learning I*, Koronacki, J, Ras, Z. Wierzchoin S, and Karprzyk (eds.), Studies in Computational Intelligence Series, Vol. 262. pp 97-120.. Springer, 2010.

38. Xiong, L., Chen, X., Huang, T., Schneider, J., Carbonell, J., "Temporal Collaborative Filtering with Bayesian Probabilistic Tensor Factorization", *Pro. of the SIAM International Conf. on Data Mining*, Columbus, OH, 2010.
39. Carbonell, J. "Intelligent Resource Collection for Low-Density Languages" (extended abstract of invited talk), In *Proceedings of LREC*, 2010.
40. Chen, X., Liu, Y. Liu, H., Carbonell, J., "Learning Spatial-Temporal Varying Graphs with Applications to Climate Change Analysis", in *Proc of the Twenty-fourth Conference on Artificial Intelligence (AAAI)*, 2010.
41. Bilotti, M., Elsas, J., Carbonell, J., and Nyberg, E., "Rank Learning for Factoid Question Answering with Linguistic and Semantic Constraints", *Proc. of the 19th ACM Internal Conference on Information and Knowledge Management (CIKM)*, 2010.
42. Zhao Z, Xia J, Tastan O, Singh I, Kshirsagar M, Carbonell J, Klein-Seetharaman J. "Virus Interactions with Human Transduction Pathways", *International Journal of Computational Biology Drug Discovery*. 2011;4(1):83-105. doi: 10.1504/IJCBDD.2011.038658. Epub 2011 Feb 17.PM ID:21330695.
43. Gangadharaiah, R., Brown, R. and Carbonell, J. "Monolingual Distributional Profiles for Word Substitution in Machine Translation", *The 23rd International Conference on Computational Linguistics, (COLING2010)*, China, August 2010.
44. Gangadharaiah R., Brown, R. and Carbonell, J., "Automatic Determination of Number of clusters for creating Templates in Example-Based Machine Translation", *The 14th Annual Conference of the European Association for Machine Translation, (EAMT2010)*, France, May 2010.
45. Chen, X., Qi, Y., Bai, B., Lin, Q., Carbonell, J., "Learning Preferences with Millions of Parameters by Enforcing Sparsity", *International Conference on Data Mining (ICDM)*, 2010.
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EXHIBIT A