

Samuel Friedman

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EXPERIENCE

Data Scientist 9/2016 – Present

Broad Institute of MIT and Harvard

Develop machine learning systems for identifying variation in the human genome.

Comparative data analysis of next generation sequencing chemistries and technologies.

Computer Vision Engineer 1/2014 – 10/2015

Flyover group, Apple Inc.

Designed and implemented computer vision solutions for processing of big data imagery.

Built large scale 3D models and 2D image classification pipelines for deep learning.

Research Associate 9/2009 – 12/2013

Computer Graphics and Vision Lab, Hunter College, CUNY

Assisted in the acquisition of dense 3-D range data from laser sensor.

Developed novel, highly efficient algorithms to detect repeated structures and self-similarity in 3D images.

Adjunct Lecturer 6/2010 – 12/2013

Computer Science Department, Hunter College, CUNY

Taught courses on the analysis and design of computer programs, C++, and web development.

Awarded a letter of commendation for outstanding student evaluations.

Information Visualizer 6/2007 – 3/2010

Evolutionary Bioinformatics Lab, Hunter College, CUNY

Designed and implemented genome browser for researchers using state-of-the-art visualization libraries.

Joint publication describing results that were verified using the genome browser.

EDUCATION

Doctor of Philosophy, Computer Science

Graduate Center CUNY, New York City, NY

Research Concentration: 3D Computer Vision GPA: 3.7

Bachelor of Science, December 2008

CUNY Baccalaureate at Hunter College, CUNY, New York City, NY GPA: 4.0

PUBLICATIONS

Deep Convolutional Neural Networks for Binary Classification of Skin Lesions, **S. Friedman**, Medical Imaging Summer School, Poster Session, Favignana, Sicily August 2016

Discovering Regularity in Point Clouds of Urban Scenes, **S. Friedman**, PhD Thesis, The Graduate Center of the City University of New York, February 2014

Automatic Procedural Modeling of Tree Structures in Point Clouds Using Wavelets, **S. Friedman** and I. Stamos, 3DV Conference, University of Washington, Seattle, June 29-30, 2013

Online Detection of Repeated Structures in Point Clouds of Urban Scenes for Compression and Registration, **S. Friedman** and I. Stamos, International Journal of Computer Vision, 2012

Online Facade Reconstruction from Dominant Frequencies in Structured Point Clouds, **S. Friedman** and I. Stamos, Point Cloud Processing at IEEE International Conference of Computer Vision and Pattern Recognition, Providence RI, June 16 2012

Real Time Detection of Repeated Structures in Point Clouds of Urban Scenes, **S. Friedman** and I. Stamos, The First Joint 3DIM/3DPVT (3DIMPVT) Conference, Hangzhou, China, May 16-19, 2011

Genome stability of Lyme disease spirochetes: comparative genomics of Borrelia burgdorferi plasmids, Casjens SR, Mongodin EF, Qiu WG, Luft BJ, Schutzer SE, Gilcrease EB, Huang WM, Vujadinovic M, Aron JK, Vargas LC, **S. Friedman**, Radune D, Weidman JF, Dimitrov GI, Khouri HM, Sosa JE, Halpin RA, Dunn JJ, Fraser CM, PLoS One. 2012;7(3):e33280. doi: 10.1371/journal.pone.0033280

COURSES TAUGHT

Discrete Math, Introduction to Machine Learning with Theano, Introduction to Computer Science, Software Analysis and Design, 3D Printing with Blender, Soldering, Sacred Geometry in Nature Hike

SKILLS

Research: Computer Vision, Machine Learning, CAD, 3D Modeling, Medical Image Analysis

Frameworks: OpenCV, Caffe, Theano, Keras, Arduino, Raspberry Pi, Rails

Programming Languages: Python, C/C++, Ruby, PHP, Java, Octave, R

References available upon request