

PHD Student in computer science with focus in artificial neural networks. Strong background in both Computer Science and Electrical Engineering. Large area of design knowledge and experience ranging from modern Micro-Architectures to Computational Methods.

Work Experience

- July 2015 - Present* **Draper Fellow, Draper Laboratory, Boston MA**
Working on several research projects in the area of machine learning. Participation in several research projects funded by the government such as MUSE and SubNet.
- Jan 2013- July 2015* **Digital Design Engineer, Allegro Microsystems, Manchester, NH**
Design engineer on full custom ASIC designs. Digital design lead on several chips. Additional experience in layout and verification including UVM.
- May 2012- Aug 2012* **Graduate Intern Technical, Intel, Hillsboro, OR**
Formal verification work on Intel's flagship processor
- June 2010 - Jan 2012* **Topological Data Analysis LLC., Durham, NC**
Research in Computational Topology and Geometric Analysis. Work on improving navigation algorithms as part of consulting for Argon ST on a DARPA funded project. Designed and implemented a novel dimension reduction technique using computational topology.
- May 2010 - Feb 2011* **Computer Science Undergraduate Research Program, Duke University, Durham, NC**
Reimplementation of several algorithms used in systems biology on the CUDA GPGPU platform. Research in design of GPGPU hardware to facilitate acceleration of such algorithms.
- Summer 2009* **Vertical Integrated Partners Program, Duke University, Durham, NC**
Combination of several DNA motif discovery and scanning algorithms into an easy to use suite. Experience with machine learning and expectation maximization algorithms.
- Summer 2008* **Computational Science, Engineering and Medicine Center (CSEM), Duke University**
Integral in the development of a 3D segmentation algorithm used for image analysis applications.

Education

PHD in Computer Science
Boston University (In Progress)
(GPA:3.9)

Relevant Classes
Compressed Sensing
Game Theory
Intro to Neuro-Engineering
Artificial Intelligence

M.S. in Computer Engineering
NC State University, 2012
(GPA:3.9)

Relevant Classes
Advanced Micro-Architecture
Advanced Parallel Arch
Advanced Embedded Systems
Code Generation and Optimizations

B.S. in Electrical and Computer Engineering
B.S. in Computer Science
Duke University, 2011

Relevant Classes

Advanced Computer Architecture I
Advanced Computer Architecture II
Energy Efficient Computer Systems
Intro To Embedded Systems
Operating Systems

Additional Research Experience

Embedded systems design for theatrical applications.
Modern microprocessor design including a novel directory based cache coherence protocol.
Software programming for the Duke DIVE.

Publications

Rangamani, A. Harer, J. (Dec 2015) Modeling Local Field Potentials with Recurrent Neural Networks. Workshop on Statistical Methods for Understanding Neural Systems. NIPS, Montreal Canada.

Kim, L. Harer, J. Rangamani, A. Moran, J. Parks, P. Widge, A. Eskandar, E. Dougherty, D. Chin, S. (Aug 2016) Predicting Local Field Potentials with Recurrent Neural Networks. IEEE Engineering in Medicine and Biology Society, Orlando Fl.

Chin S. Cohen J. Albin A. Hayvanovych M. Reilly E. Brown G. Harer J. (June 2017) A Mathematical Analysis of Network Controllability Through Driver Nodes. IEEE Transactions on Computational Social Systems. Volume: 4. Issue:2.