Asha Anoosheh

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Education

University of California, Berkeley (Graduation due May 2016)
Bachelor of Science, Electrical Engineering & Computer Science GPA: 3.72

Undergraduate Research Experience

International Computer Science Institute (Jan 2016 – present)
- Experimenting effectiveness of complex-valued neural networks on fMRI reconstruction

Self-Motivated Research (Aug 2015 – present)
- Authoring a paper on the speedup of distributed neural nets via reduction in the IPC bottleneck
- Using Torch to implement the Graph Neural Network for use in advanced traffic prediction

Berkeley Institute for Data Science (Jan 2015 – present)
- Performed web scraping, storage, analysis, and learning of textual and image data from specific commodities

National University of Singapore (Aug – Dec 2014)
- Researched approximate computing using floating-point precision tuning and its effects on FPGA performance

Work Experience

Google / Nest – Palo Alto, CA *Software Engineering Intern* (May – Aug 2015)
- Created backend for an internal tool for automating mobile app UI alteration and exploration
- Helped develop a page-object framework for self-navigating Android, iOS, and web applications

NVIDIA – Santa Clara, CA *Software Engineering Intern* (May – Aug 2014)
- Worked on Android Platform Team to customize, debug, and add features to AOSP framework for Nvidia devices
- Implemented dynamic region-based package management and customized filesystem for external storage
- Assembled a custom Android file manager, generalized for future personalization

Intertrust Technologies – Sunnyvale, CA *Software Engineering Intern* (Jun – Aug 2013)
- Developed an NFC security library and application on Android platform for internal company projects
- Implemented front-end procedure for cloud storage data transfer used by the Kabuto collaboration platform

Skills & Knowledge

- *Programming*: C, Python, Java, C++, CUDA, OpenCL, OpenMP, OpenGL, Ruby, JavaScript, R, SQL
- *Software*: Caffe, Torch, Scikit, Hadoop, MATLAB, Node, Git/SVN, Autodesk, Multisim
- *Mathematics*: Multivariable Calculus, Linear Algebra, Differential Equations, Discrete Math, Combinatorics
- *Electrical Engineering*: Microelectronic Circuits, Signals & Systems, Convex Optimization
- *Physics*: Astrophysics, Quantum Mechanics, Relativity, Kinematics, E&M, Optics
- *Other:* Fluent in Farsi with basic knowledge of French; BSA Eagle Scout 2011

Courses and Projects

Computer Vision (in progress)
- Learned 3D-rotation, homographies, oriented edge-detection, histogram equalization, and CNNs

Computer Graphics (in progress)
- Implemented rasterization, texture mapping, Bezier surfaces, meshes, shaders, and ray-tracing

Parallel Computing and Software (2015)
- Learned parallel design patterns and architectural paradigms for multi-core, GPU, and distributed computing
- Initiated a custom project to speed up large-scale distributed neural-nets via IPC reduction (and succeeded)

Image Manipulation and Computational Photography (2015)
- Assembled a pipeline for processing and identifying new supernovae using the KAIT telescope (Custom project)
- Wrote programs that automatically align, contrast, hybridize, blend, resize, carve, morph, and stitch images

Machine Learning (2015)
- Implemented Linear/Logistic Regression, kernel methods, PCA, Neural Nets, unsupervised and scalable learning

Artificial Intelligence (2015)
- Implemented CSPs, MDPs, RL, Bayes Nets, GMM, HMMs, Decision Trees, and SVMs in projects

Computer Security (2015)
- Learned cryptography, block ciphers, RSA, DoS, TLS, TCP-IP, UDP, hashing theory, and Bitcoin blockchain
- Performed buffer-overflow, DNS spoofing, SQL Injections, and XSS Injections on mock targets

Efficient Algorithms and Intractable Problems (2014)
- Learned optimization, FFT, recurrence relations, graph theory, greedy algorithms, DP, complexity theory

Operating Systems and Systems Programming (2014)
- Implemented multiprogramming in an OS via threads, schedulers, shared file system, and VM mapping
- Created both a local and network-distributed key-value store system with atomicity and concurrency

Database Systems (2014)
- Learned and implemented DBMS, entity-relationship models, and relational databases
- Engineered a database server with web-client interface and backend, from scratch, for an event-booking system

Computer Architecture (2013)
- Implemented keyword-proximity search to run remotely on Amazon EC2 servers via Hadoop
- Utilized OpenMP, SSE SIMD, and various optimizations to speed up image convolution by a thousand times
- Constructed a functioning, pipelined MIPS CPU using Logisim
- Built a MIPS assembly instruction simulator in C

Data Structures and Algorithms (2013)
- Created a graph-based computer board game and AI player that plays based via self-pruning Minimax
- Learned streams, disjoint-sets, splay trees, 2-4 trees, heaps, amortized analysis, and run-length encoding

Structure and Interpretation of Programs (2012)
- Made an interpreter for Scheme Lisp
- Wrote a program to parse, search, and geographically map scraped Twitter data

iD Introduction to C++ [Stanford University] (2011)
- Designed and created five games from scratch as personal projects