Tushar Pankaj

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Citizen of United States & Canada

Education

University of Minnesota – Twin Cities — **Minneapolis, MN**
BS, Computer Science — *2018–2020 (expected)*
Cum. GPA: 3.78/4.00, Major GPA: 3.78/4.00

University of California, Berkeley — **Berkeley, CA**
Electrical Engineering and Computer Science — *2015–2016*
Cum. GPA: 3.81/4.00, Major GPA: 3.95/4.00

Work Experience

Facebook, Inc. — **Menlo Park, CA**
Software Engineer Intern — *May 2018–Jul 2018*
- Designed, trained, and wrote production code to serve up new machine learning model in News Feed
- Ran online experiments and analyzed the performance of new News Feed model
- Built internal tool to parse and display News Feed ranking configuration file in a human readable and searchable manner
- Added new features to existing internal tool for understanding of online impact

Qualcomm CDMA Technologies — **San Diego, CA**
Systems Engineer Intern — *May 2017–Aug 2017*
- Deployed multitude of deep learning algorithms to improve upon traditional camera designs and capabilities
- Worked on image regression using convolutional neural networks
- Helped design multi-resolution approach to improve on luma and chroma noise and color tone for different ISOs
- Migrated team to Amazon AWS deep learning training infrastructure
- Taught lecture on deep learning to 100+ software and systems engineers across the company

Qualcomm Research — **San Diego, CA**
Software Engineer Intern — *May 2016–Aug 2016*
- Designed and implemented high performance logging of 4K video on Qualcomm Snapdragon Flight platform
- Designed and implemented signal processing algorithms for fully automated flight test system
- Wrote device driver for RS-485 protocol to actuate motors on a mobile robot
- Worked on Qualcomm Hexagon DSP bringup on new board for flight control

Research Experience

Berkeley DeepDrive — **Berkeley, CA**
Undergraduate Research Assistant — *Jan 2017–Sep 2017*
- Researched use of LSTM and other recurrent neural network architectures for autonomous driving
- Adapted SqueezeNet convolutional neural network architecture from image classification to autonomous driving
- Optimized convolutional neural network training codebase to achieve 10x speed-up

Berkeley Wireless Research Center — **Berkeley, CA**
Undergraduate Research Assistant — *Aug 2016–Dec 2016*
- Implemented real-time inference for hyperdimensional computing ML algorithm on embedded ARM device

Patents

- Hwang, Hau, Tushar Pankaj, Vishal Gupta, and Jisoo Lee. 2017 (pending). "Image Signal Processor for Processing Images."

Publications

- Chowdhuri, Sauhaarda, Tushar Pankaj, and Karl Zipser. "MultiNet: Multi-Modal Multi-Task Learning for Autonomous Driving." In *2019 IEEE Winter Conference on Applications of Computer Vison (WACV)*, pages 1496–1504. IEEE, 2019.

Coursework

Machine Learning • Data Structures • Operating Systems • Computer Architecture • Embedded Systems (in progress) • Discrete Math & Probability • Circuits & Electronics • Signals & Systems • Electricity & Magnetism • Multivariable Calculus • Vector Calculus • Linear Algebra • Differential Equations

Technical Skills

Proficient: C • Assembly (ARM, AArch64, x86, MIPS) • OCaml • C++ • Java • Python • Git • Mercurical • Linux • Bash • HTML • LaTeX

Skilled: SQL • PHP • MATLAB

Familiar: Scheme • Android • JavaScript • CSS • React • Subversion • MongoDB