Giulio Zhou

Email: giuliozhou8@gmail.com | **Website:** giuliozhou.com | **GitHub**: github.com/giulio-zhou

Education

University of California, Berkeley (Berkeley, CA) 08/2012 – 05/2016
Bachelor of Arts, Computer Science **Cumulative GPA:** 3.891

Relevant Coursework: Machine Learning, Artificial Intelligence, Computer Vision, Operating Systems, Image Processing, Probability and Random Processes, Data Structures, Computer Networking, Database Systems.

Research Experience

Algorithms, Machines and People Lab 05/2016 – *present*

- Worked under Joseph Gonzalez on Clipper, a system for online, low-latency machine learning model serving.
- Implemented the REST interface and a C++ RPC server to support Vowpal Wabbit, a scalable library for linear model predictions.
- Benchmarked Clipper RPC system on AlexNet, Network-in-Network and Inception Tensorflow models, demonstrating throughput and latency parity with Google's Tensorflow Serving system.
- Explored the use of classification and hypothesis testing techniques for real-time covariate shift detection and adaptation (through online reweighted model retraining).
- Publication: Daniel Crankshaw, Xin Wang, **Giulio Zhou**, Joseph E. Gonzalez. *Clipper: A Low-Latency Online Prediction Serving System.* NSDI, 2017. To Appear.

Berkeley Artificial Intelligence Research Lab 03/2015 – *present*

- Worked under Stuart Russell on sampling algorithms for Bayesian LOGic (BLOG), an open-universe probabilistic modeling language.
- Implemented a Gaussian Mixture Model (with temporal and spatial constraints) for background subtraction in video sequences. Written in 20 lines of BLOG code, the algorithm achieves comparable performance to OpenCV's state-of-the-art background subtraction libraries. Submitted to DARPA as part of DARPA's Probabilistic Programming for Advancing Machine Learning (PPAML) initiative.

Nanocrystal Synthesis Lab 01/2014 – 12/2014

- Ran experiments on the NERSC supercomputers, using gradient descent optimization and the generalized moments method to simulate the optical and mechanical properties of tetrapod nanocrystals.
- Implemented a 3D lattice-spring model (with Java multithreading) to simulate polymer stress-strain effects.

Industry Experience

Google, inc. 05/2015 – 08/2015
Software Engineering Intern

- Worked on the Display Ad Automation Team to improve the quality of Native Ads.
- Designed and built a backend pipeline for high-quality automated text-to-image matching for internationalized display ads.
- Developed quality visualization tools and deployed non-English Native Ads, doubling overall coverage.

Teaching Experience

CS 189/289A, Introduction to Machine Learning (Fall 2016)

- Taught undergraduate and graduate students in two weekly 1-hour discussions, covering topics such as support vector machines, bias-variance tradeoff, classifiers, logistic regression, kernelization, and neural networks.

CS 61BL, Data Structures and Programming Methodology (Summer 2016)

- Prepared daily mini-lectures, developed course material and led 12 hours of laboratory instruction per week.

CS 61B, Data Structures and Algorithms (Spring 2016)

- Held office hours, wrote exam problems and led weekly discussion and laboratory sections.
- Led the CS Scholars section, comprised primarily of students with little to no background in computer science and from typically underrepresented demographic groups.

Organizations

Tau Beta Pi, Engineering Honor Society
Information Technology Chair 01/2015 – 05/2016

- Oversaw a 4-member team in Django full-stack development, maintaining a strict code review system and requiring comprehensive unit-testing and style adherence.
- Led the development and deployment of the Tau Beta Pi Alumni Database, connecting Tau Beta Pi members to alumni mentors throughout industry and academia.
- Coordinated Tau Beta Pi website hackathons, where participants work in teams on novel website features; notable projects include search autocompletion, Alumni Database prototype, and tools for website analytics.

Professional Development Officer 09/2014 – 12/2014

- Held mock interviews and critiqued resumes for Tau Beta Pi members and the broader engineering community.
- Coordinated professional skills events, featuring workshops on Analytical Problem Solving, People Skills and Cultural Awareness.

Member (Tau Beta Pi accepts the top 25% seniors in the College of Engineering) 05/2014 - *present*

Technical Skills

Programming Languages: Python, Java, C, C++, MATLAB, SQL, Rust, HTML/CSS/JS, LaTeX
Software/Frameworks: Caffe, Tensorflow, Django, Apache Spark, Hadoop MapReduce, scikit-learn, scikit-image