Casey Chu • (650) 455-8193 • caseychu@stanford.edu

a deep learning researcher looking to bridge theory and practice

EDUCATION

Stanford University (September 2016 to present) Stanford, CA
Ph.D. in Computational Mathematics, GPA: 3.93

Harvey Mudd College (August 2012 to May 2016) Claremont, CA
B.S. in Mathematics, GPA: 3.91 (overall), 3.93 (major)

TECHNICAL SKILLS AND COURSEWORK

Deep Learning: Natural language processing; Reinforcement learning; Generative adversarial networks; Computer vision
Math Fundamentals: Discrete math; Linear algebra; Multivariable calculus; ODEs; PDEs; Probability; Statistics
Pure Math: Real analysis; Abstract algebra; Representation theory; Differential geometry; Algebraic topology
Computer Science: Data structures; Algorithms; Computer systems; Numerical linear algebra; Numerical optimization
Web Programming: JavaScript (e.g. Node, React, Redux); HTML; CSS; Linux server administration; web APIs
Other Programming: Arduino; C++; Java; Haskell; LaTeX; Mathematica; Matlab; PHP; Python; Racket; SQL; TensorFlow

StackOverflow profile: http://stackoverflow.com/users/298233
GitHub profile: https://github.com/bitsofpancake

INDUSTRY EXPERIENCE

Google, Software Engineering Intern (June 2017 to September 2017) Mountain View, CA
 • Designed a generative adversarial network that modifies facial expressions in a given photograph.
 • Researched state-of-the-art approaches to image synthesis, such as CycleGAN, BEGAN, and SRGAN.
 • Proposed novel combinations and modifications that suit the particular problem of facial expression synthesis.
 • Implemented and tested over 70 experimental models using TensorFlow and Google's internal infrastructure.

Facebook, Front-End Engineering Intern (May 2014 to August 2014) Menlo Park, CA
 • Prototyped and iterated on a new way to interact with notifications on Facebook's web site, using PHP and JavaScript.
 • Acted as the point-of-contact for internal feedback and addressed concerns regarding the new interaction.
 • Oversaw its testing and release to millions of users and interpreted the resulting data.
 • Rewrote and improved the scrolling and positioning logic of the right-hand column on the Facebook home page, resulting in a dramatic 4% increase in revenue from the ads placed there.

RESEARCH EXPERIENCE

Harvey Mudd College with Professor Weiqing Gu (September 2015 to May 2016) Claremont, CA
Department of Mathematics
 • Investigated the use of geometry, specifically differential geometry, in the analysis of data.
 • Constructed a three-step framework to discover patterns in time series data: assign distance, cluster, forecast.
 • Defined Riemannian metrics on the space containing the data, providing a novel way to probe data for insight.
 • Received the department's Chavin Prize for outstanding paper in the mathematical sciences.
Research details: http://math.hmc.edu/seniorthesis/archives/2016/cchu/cchu-2016-thesis.pdf

Northwestern University with Professor Yoram Lithwick and Dr. Fabio Antonini (June 2015 to August 2015) Evanston, IL
Department of Physics & Astronomy; Center for Interdisciplinary Exploration and Research in Astrophysics
 • Developed an algorithm to infer the gravitational potential of a galaxy from observed positions and velocities of stars.
 • Wrote a simulation of 10,000 stars in both Mathematica and C++ to test the efficacy of the algorithm.
 • Studied galactic dynamics, Hamiltonian mechanics, and Bayesian inference to inform the algorithm's development.
Research details: http://bitsofpancake.github.io/potential-inference