Deqing Fu

312-483-9447 | deqing@uchicago.edu | 808 S. Michigan Ave. Chicago, IL 60605

Education

The University of Chicago — Chicago, IL
B.S. in Mathematics (with Honors)*; B.S. in Computer Science* (with Honors)*; B.A. in Statistics* — *Sep. 2016 – Jun. 2020*
GPA: Cumulative: 3.69/4.0 | Mathematics: 3.88 | Computer Science: 3.80 | Statistics: 3.94

The University of Chicago — Chicago, IL
M.S. in Statistics — *Sep. 2020 – Jun. 2022*
GPA: 3.9/4.0

Experience

Research Assistant — Dec. 2020 – Present
The University of Chicago, Department of Statistics — *Chicago, IL*
- Researching on **Machine Learning Thoery** and **Time-Aware Machine Intelligence**, supervised by *Professor Lek-Heng Lim*.

Research Assistant — Sep. 2020 – Present
The University of Chicago, Jason Salavon Studio — *Chicago, IL*
- Researching on **Generative Adversarial Networks** and **Style Translation**, supervised by *Professor Jason Salavon*.
- Collaborated in a team to train style transferring networks conditioning on edge maps, facial features, pose key-points, and semantic segmentations. Compared our results with other state-of-the-art methods (DS-Map, StarGAN-v2 and SPADE) trained on both standard datasets (CelebA-HQ and FFHQ) and proprietary television series dataset (ClassicTV).
- Submitted a paper, ***Harnessing the Conditioning Sensorium for Improved Image Translation***, to IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2021).
- Integrated the trained network into an iOS application.

Research Assistant — Jan. 2019 – Present
The University of Chicago, Department of Computer Science — *Chicago, IL*
- Researching on **Computer Vision** and Deep Learning, supervised by *Professor Michael Maire*.
- Researching on **Amodal Image Instance Segmentation** to infer segmentations of both visible and occluded parts of objects. Proposed a multi-level sheet model as an approach to make object connectivity and occlusion relationships explicit: image pixels are bound to different sheets, with jumps between sheets enabling one object to slide behind another.
- Researching on **Self-supervised Edge Detection** to produce pseudo ground truth edge maps for unseen images. Collaborated within the group to train an image inpainting network as a proxy for edge detection.

Software Engineer Intern — Jun. 2018 – Aug. 2018
Industrial Toys Studio, Electronic Arts — *Pasadena, CA*
- Used Unreal Engine 4 to implement game logic for the prototype of a mobile first-person shooter game. Wrote tools for engineering and art teams, debugged, and optimized existing functionalities of the game prototype.

Summer Research Assistant — Jun. 2017 – Aug. 2017
Argonne National Laboratory, Mathematics and Computer Science Division — *Lemont, IL*
- Researched on **Automatic Differentiation**, supervised by *Dr. Paul Hovland and Dr. Sri Hari Krishna Narayanan*.
- Benchmarked the efficiency of ADOL-C, an Automatic Differentiation algorithm and implemented machine learning codes with it. Presented research results to Argonne scientists at Summer Argonne Students' Symposium.
- Submitted a report paper, *Comparison of two gradient computation methods in Python*, with advisors Dr. Paul Hovland and Dr. Sri Hari Krishna Narayanan, which was accepted as a poster at NIPS 2017 Autodiff Workshop.

Honors & Grants Awarded

Susanne H. Rudolph Scholarship ($27,708)	2020 – 2021
Liew Family College Research Fellows Fund ($5,000)	2020
Dean's List (Top 20% each academic year)	2017, 2018, 2019, 2020

Relevant Coursework

Mathematics:
Abstract Algebra I-II-III (Honors), Discrete Math (Honors), Combinatorics (Honors), Algorithms (Honors), Analysis I-II-III (Accelerated), Complex Analysis, Point-Set Topology, Ordinary Differential Equations

Statistics and Applied Math:
Statistics Theory and Methods Ia-IIa, Distribution Theory, Measure-Theoretic Probability, Matrix Computation, Optimization, Convex Optimization, Nonlinear Optimization, Monte Carlo Simulation, Markov Chains and Brownian Motions, Time Series Analysis, Applied Linear Statistical Models, Generalized Linear Models, Numerical Partial Differential Equations.

Machine Learning and Deep Learning:
Machine Learning, Speech Technologies, Computer Vision, Computational Linguistics, Probabilistic Graphical Models, Fundamentals of Deep Learning, Topics in Deep Learning: Discriminative Models

Technical Skills

Languages: Python, C/C++, MATLAB, R, SQL
Deep Learning: TensorFlow, Keras, PyTorch, Computer Vision