Deqing Fu
808 S. MICHIGAN AVE., CHICAGO, IL 60605
(312) 483-9447 | deqing@uchicago.edu

EDUCATION

The University of Chicago   2016 – 2020
Mathematics (B.S.) *with Honors*
Computer Science (B.S.) *with Honors*; specialization in Machine Learning
Statistics (B.A.)
GPA: Cumulative: 3.69 | Mathematics: 3.88 | Computer Science: 3.80 | Statistics: 3.94
The University of Chicago   2020 – 2022
Statistics (M.S.)

RESEARCH EXPERIENCE

Undergraduate Researcher, Department of C.S. University of Chicago   Jan. 2019 – Present
Supervised by Professor Michael Maire

- Researching on Computer Vision and Deep Learning. Working on the project of Amodal Image 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.
- Applied a spectral embedding technique as postprocessing to cluster pixels into regions and was able to retrieve a 2.5-dimensional layered interpretation of the scene depicted in a 2-dimensional input image. Trained a convolutional neural network model on COCO Amodal dataset of 5000 images with annotations, using PyTorch.

Summer Researcher, MCS Division, Argonne National Laboratory   Jun. 2017 – Aug. 2017
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.

PROFESSIONAL EXPERIENCE

Software Engineer Intern, Industrial Toys, Electronic Arts   Jun. 2018 – Aug. 2018

- Used Unreal Engine 4 (C++ and Blueprint) to implement game logics 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.

HONORS & GRANTS AWARDED

- Liew Family College Research Fellows Fund ($5,000)   2020
- Dean's List (Top 20% each academic year)   2017, 2018, 2019, 2020
- Jeff Metcalf Fellowship Grant ($4,000 per year)   2017, 2018, 2019

RELEVANT COURSEWORK

- *Pure Mathematics:*
  Abstract Algebra I-II-III (Honors), Discrete Math (Honors), Combinatorics (Honors), Analysis I-II-III (Accelerated), Complex Analysis, Point-Set Topology, Ordinary Differential Equations.
- *Statistics and Applied Math*:
  Statistics Theory and Methods Ia-IIa (Graduate), Applied Linear Statistical Models (Graduate), Mathematics Computation I (Graduate), Convex Optimization (Graduate), Nonlinear Optimization (Graduate), Numerical Partial Differential Equations (Graduate), Monte Carlo Simulation (Graduate), Probabilistic Graphical Models (Graduate), Multivariate Statistical Analysis, Optimization, Markov Chains and Brownian Motions.
- *Computer Science with specialization in Machine Learning:*
  Algorithms (Honors), Machine Learning, Speech Technologies (Graduate), Computer Vision, Computer Systems, Networks and Distributed Systems, Database, Computational Linguistics.

SKILLS

- **Programming Languages**: C/C++, Python, R, MATLAB, SQL
- **Machine Learning**: TensorFlow, Keras, PyTorch, Computer Vision, Speech, Deep Learning