941 Bloom Walk, SAL 246
Los Angeles, CA 90089
+1 (312) 483 9447
deqing.fu@usc.edu
deqingfu.github.io
@DeqingFu

Deqing Fu

Education

2022–Present **Ph.D. in Computer Science**, *University of Southern California*
Advisors: Vatsal Sharan (ML Theory), Mahdi Soltanolkotabi (ML Theory) & Robin Jia (NLP)
Honors and Awards: Provost Fellowship

2020–2022 **M.S. in Statistics**, *University of Chicago*
Advisors: Bradley J. Nelson, Lek-Heng Lim
Thesis: Topological Regularization in Deep Learning
Honors and Awards: Susanne H. Rudolph Scholarship

2016–2020 **B.S. *with Honors* in Mathematics & Computer Science**, *University of Chicago*
Honors and Awards: Dean's List (2016-2020)
Liew Family College Research Fellows Fund
Jeff Metcalf Internship Award

Research Interests

- Theories of Machine Learning and Deep Learning
- Computer Vision; Self-Supervised Learning and Representation Learning
- Natural Language Processing; Adversarial Data Collection and Generation; Robustness
- Deep Generative Model and its Artistic Applications
- Topological Data Analysis and its connection with Deep Learning

Publications

[1] **Deqing Fu** and B. J. Nelson, "Topological regularization for dense prediction," *2022 IEEE International Conference on Machine Learning and Applications (ICMLA)*, 2022.

[2] C. Nederhood, N. I. Kolkin, **Deqing Fu**, and J. Salavon, "Harnessing the conditioning sensorium for improved image translation," *2021 IEEE/CVF International Conference on Computer Vision (ICCV)*, pp. 6732–6741, 2021.

[3] S. H. K. Narayanan, P. D. Hovland, K. Kulshreshtha, D. Nagarkar, K. Macintyre, R. Wagner, and **Deqing Fu**, "Comparison of two gradient computation methods in python," *2017 NeurIPS Workshop on Automatic Differentiation*, 2017.

Service

Reviewer ECCV 2022

Research Experience

2022-Present **Research Assistant**, *Department of Computer Science, University of Southern California*
Supervisors: Prof. Vatsal Sharan & Prof. Mahdi Soltanolkotabi
Topic: Deep Learning Theory

2022-Present **Research Assistant**, *Department of Computer Science, University of Southern California*
Supervisors: Prof. Robin Jia
Topic: Natural Language Processing

2020-2022 **Research Assistant**, *Department of Statistics, University of Chicago*
Supervisors: Prof. Lek-Heng Lim and Dr. Bradley Nelson
Topic: Topological Data Analysis [1]

2020-2021 **Machine Learning Research Assistant**, *Jason Salavon Studio & University of Chicago*
Supervisor: Prof. Jason Salavon
Topic: Generative Adversarial Networks & Arts [2]

2019-2021 **Research Assistant**, *Department of Computer Science, University of Chicago*
Supervisor: Prof. Michael Maire
Topic: Computer Vision

2017 **Summer Student Research Assistant**, *MCS Division, Argonne National Laboratory*
Supervisors: Dr. Paul Hovland & Dr. Sri Hari Krishna Narayanan
Topic: Automatic Differentiation [3]

Professional Experience

2022 **Software Engineer Intern**, *Google*, Mountain View, CA
Hosts: Xiao Luo & Gabby Wang *Team*: Google Search - Knowledge Engine

2021 **Software Engineer Intern**, *Google*, Mountain View, CA
Hosts: Ke Lan & Kaan Yucer *Team*: Google Lens

2018 **Software Engineer Intern**, *Industrial Toys, Electronic Arts*, Pasadena, CA
Host: Jason Pecho

Teaching Experience

Teaching Assistant

Fall 2021 **BUSN 41301**, Statistical Insight into Marketing, Consulting, and Entrepreneurship
Winter 2018 **MATH 15300**, Calculus - III
Fall 2017 **MATH 15200**, Calculus - II

Grader

Fall 2021 **CMSC 31230**, Fundamentals of Deep Learning
Spring 2020 **STAT 24620**, Multivariate Statistics and Data Analysis
Winter 2019 **MATH 20100**, Mathematical Methods for Physical Science
Fall 2018 **MATH 19520**, Mathematical Methods for Social Science
Spring 2018 **MATH 20300**, Analysis in Rn - I

Skills

Programming	C/C++, Python, LaTeX, MATLAB, R, Java
Deep Learning	PyTorch, TensorFlow, Keras, Computer Vision