# Alan Qingran Wang

+1 (708) 600 4160 • alanqrwang@gmail.com
alanqrwang.github.io

## Education

**Cornell University and Cornell Tech** **2024**
*Ph.D., Electrical and Computer Engineering* *Ithaca and New York, NY*
- Focus: Machine Learning for Biomedical Imaging
- Advisor: Mert Sabuncu
- Thesis Committee: Chris Xu, Jayadev Acharya

**University of Illinois at Urbana-Champaign** **2019**
*B.S., Computer Engineering* *Champaign, IL*
- Thesis: Structural Consistency for Diverse Video Colorization
- Advisor: Alexander Schwing

## Publications

* indicates equal contribution.

**Computing Multiple Image Reconstructions with a Single Hypernetwork** AQ Wang, AV Dalca, MR Sabuncu. *Machine Learning for Biomedical Imaging 2022*

**KeyMorph: Robust Multi-modal Affine Registration via Unsupervised Keypoint Detection** E Ma, AQ Wang, AV Dalca, MR Sabuncu. *Medical Imaging with Deep Learning 2021 (Oral)*

**Hyper-Convolutions via Implicit Kernels for Medical Imaging** T Ma, AQ Wang, AV Dalca, MR Sabuncu. *arXiv preprint*

**Joint Optimization of Hadamard Sensing and Reconstruction in Compressed Sensing Fluorescence Microscopy** AQ Wang*, AK LaViolette*, L Moon, C Xu, MR Sabuncu. *International Conference on Medical Image Computing & Computer Assisted Intervention 2021*

**HyperRecon: Regularization-Agnostic CS-MRI with Hypernetworks.** AQ Wang, AV Dalca, MR Sabuncu. *Machine Learning for Medical Image Reconstruction 2021 (Oral)*

**Neural Network-based Reconstruction in Compressed Sensing MRI Without Fully-sampled Training Data.** AQ Wang, AV Dalca, MR Sabuncu. *Machine Learning for Medical Image Reconstruction, 2020 (Oral)*

**Extending LOUPE for K-space Under-sampling Pattern Optimization in Multi-coil MRI.** J Zhang, H Zhang, AQ Wang, QZ, MR Sabuncu, P Spincemaille, TD Nguyen, Y Wang. *Machine Learning for Medical Image Reconstruction, 2020*

**Deep-learning-based Optimization of the Under-sampling Pattern in MRI.** CD Bahadir*, AQ Wang*, AV Dalca, MR Sabuncu. *IEEE Transactions on Computational Imaging, 2020*

## Research and Work Experience

**Google - Display Ads Engineering, Modeling, and Optimization** **2022**
*Software Research Intern* *Mountain View, CA*
- Designed neural network architectures for ad price prediction in first-price auctions
- Efforts led to 5% improvement in statistical metrics, and 2% improvement in downstream surplus metrics.

**Google - Cloud AI Vision** **2021**
*Software Research Intern* *Sunnyvale, CA*
- Designed algorithms for visual inspection, specifically anomaly detection and localization
- Used one-class classification deep neural network models.
- Improved performance by 5% overall, with up to 20% in specific settings.

**MIT Lincoln Laboratory** **2019**
*Research Intern* *Boston, MA*
- Developed deep learning algorithms for modeling coding and modulation in wireless communication channels

**Amazon - AWS S3** **2018**
*Software Development Intern* *Seattle, WA*
- Designed a centralized database for S3 throttle rules using a NoSQL, eventually-consistent model
- Implemented cross-platform web console for CRUD operations of database entries, using Spring Boot MVC framework for dependency injection, server-side scripting, and auto-wired components

## Teaching

**ECE 5415 - Applied Digital Signal Processing and Communications** **2022**
*Teaching Assistant* *Cornell Tech*
- Held office hours, answered online forum questions, and conducted recitations/lectures

**ECE 4250 - Digital Signal and Image Processing** **2021**
*Teaching Assistant* *Cornell University*
- Held office hours, answered online forum questions, and conducted recitations/lectures

**CS 446 - Machine Learning** **2019**
*Undergraduate Teaching Assistant* *University of Illinois*
- Responsible for grading assignments and holding office hours

## Awards

Microsoft PhD Fellowship Nominee 2021

MICCAI 2021 Student Travel Award

Cornell Fellowship Award

## Technical Skills

Languages: Python, Java, C/C++
Frameworks: PyTorch, Keras, Tensorflow