# Di An

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## EDUCATION

**Whiting School of Engineering, Johns Hopkins University**, Aug 2023 – Now

Ph.D in Electrical and Computer Engineering, Baltimore, MD, US

- **Core Courses:** Compressed Sensing, Random Signal Analysis, Matrix Analysis, Random Matrix Analysis, Optimization in Data Science, Convex Optimization, Deep Learning, Machine Intelligence.

**Viterbi School of Engineering, University of Southern California**, Aug 2021 – May 2023

Awarded as **Honor MS student** in Electrical Engineering, Los Angeles, CA, US

- **Core Courses:** Linear Algebra, Probability, Computing Principle, Machine Learning-Supervised Learning, Digital Signal Processing, Random Processes, Optimization for the Information and Data Science. Computational Methods for Inverse Problems

**School of Electronic and Information Engineering, Xi'an Jiaotong University** Sep 2016 – May 2020

BS in Automation, Xi'an, China

- **Core Courses:** Digital Signal Processing, Image Processing, Data Mining, Operations Research, Network Information, Complex Analysis, Discrete Mathematics, Advanced Mathematics, Control System

## RESEARCH EXPERIENCE

**Optics Image Reconstruction** May 2024 – Now

Johns Hopkins University, Supervisor: Prof. Trac D.Tran & Prof. Mark Foster

- Using ElasticnNet to estimate the sensing matrix without calibration and reconstructed the image through OMP.
- Trained modified ViT model for reconstruction task also and found improved performance using new estimator.
- Combining the previous method together to make more reliable reconstruction result.

**Noise Backpropagation through Nonlinear Reconstruction** May 2022 – May 2023

University of Southern California, Supervisor: Associate Prof. Justin P. Haldar

- Raised the idea there could be hidden noise in the standard dataset.
- Came up with estimator for the non-central chi distribution. to train different Neural Network.
- Trained different neural network and found improved performance using new estimator.

**Robustness of 3D Point Cloud Models** Jan 2022 – June 2022

Arizona State University , Supervisor: Associate Prof. Chaowei Xiao

- Ran GAN based, Fusion based and other data augmentation methods on ModelNet40-c.
- Found the weak point of the model using adversarial training method and improved model's robustness.
- Improved robustness for model on 3D point cloud data.

**Tele-Robot & Deep-Learning** June 2019 – Sep 2019

National University of Singapore , Supervisor: Associate Prof. SOO Yuen Jien

- Used Raspberry Pi and Arduino communicating with each other, together controlling the tele-robot.
- Implemented the SLAM into the tele-robot to achieve mapping ability.
- Used CNN to train the network for tele-robot to recognize the barriers on the ground.

## PUBLICATIONS

**The "hidden noise" problem in MR image reconstruction** March 2024

Jiayang Wang, ***Di An***, Justin P. Haldar *DOI:*10.1002/mrm.30100

## WORKING EXPERIENCE

**Biomedical Imaging Group, USC** | Research Intern May 2023 – May 2024

Advisor: Associate Prof. Justin P. Haldar

Research Area:

- Noise effect for inverse problem.
- New estimator for choosing a better-performing model.

**School of Cyber Science and Engineering, XJTU,China** | Research Intern Sep 2018 – Jan 2019

Advisor: Prof. Jing Tao

Research Area:

- Analysis data flow between various software.
- Automatically extracting and analyzing data flow's feature.

## TEACHING EXPERIENCE

**Johns Hopkins University**, Sep 2024 – Dec 2024

*TA* for EN.520.651 Random Signal Analysis

## Skills

- Programming Language: C, C++, Python, MATLAB, SPSS, TensorFlow, Cuda, Pytorch.
- Tools: Git, Docker, Xshell, WireShark