

GUANGXIN ZHAO

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EDUCATION

Imperial College London <i>MSc in Communications and Signal Processing</i>	London, UK <i>Sept 2024 - Sept 2025</i>
University of Birmingham <i>BEng in Electronic and Electrical Engineering (1st Class Honors)</i> <u>GPA: 4.25/4.25</u> Relevant Courses: Engineering Mathematics 2&3 (89/100, 95/100).	Birmingham, UK <i>Sept 2022 - Jun 2024</i>
University of Electronic Science and Technology of China (UESTC) <i>BEng in Photoelectric Science and Engineering</i> <u>GPA: 3.85/4.0</u> Scholarship: UESTC Excellent Student Scholarship (Jun 2022) Relevant Courses: Introduction to Deep Learning (91/100), Engineering Mathematics (91/100), Probability and Statistics (98/100), Linear Algebra and Spatial Analytic Geometry (82/100), and Calculus I&II (93/100 & 87/100).	Chengdu, China <i>Sept 2020 - Jun 2022</i>

PUBLICATIONS

Guangxin Zhao; Jinlong Li; Jingyi Xi; Lin Luo. “An Efficient and Stable Registration Framework for Large-Scale Point Clouds at Different Times”. *Sensors*. 2024.

Guangxin Zhao, Jinlong Li, Lin Luo, Haonan Cheng. “A Deep Neural Network-Based Distortion Registration Technique for Astronomical Images”. *14th International Conference on Information Optics and Photonics (CIOP 2023)*. 12935, 49-59, 2023.

Guangxin Zhao. “Dissecting and Implementing SOVA Algorithm Variations in Convolutional and Turbo Code Decoding: An Analytical Approach”. *2024 4th Asia-Pacific Conference on Communications Technology and Computer Science (ACCTCS 2024)*. 2024.

RESEARCH EXPERIENCE IN DEEP LEARNING

A Stable and Efficient Large-Scale Point Cloud Registration Framework <i>Independent Study supervised by Dr. Lin Luo, Southwest Jiaotong University</i> <ul style="list-style-type: none">Developed a large-scale point cloud registration framework, utilizing random sampling for downsamplingConducted coarse registration using a neural network combined with RANSAC and fine registration using ICPCurrently testing networks on train component scans and comparing their performance based on RMSE and MAE	Chengdu, China <i>Jul 2024-present</i>
A Deep Neural Network-Based Image Distortion Registration for Astronomical Image Improvement <i>Independent Study supervised by Dr. Lin Luo, Southwest Jiaotong University</i> <ul style="list-style-type: none">Reproduced results from a research paper by implementing the CycleMorph network and achieved similar outcomes using the RaFD dataset used in the paperOptimized the CycleMorph model by incorporating a self-gated soft attention mechanism.Tested the optimized model on the RaFD dataset and compared the results with the original network, based on SSIM and MSE	Chengdu, China <i>Sept 2021 - Aug 2023</i>
Handwritten Digit Recognition <i>Course Project supervised by University of Electronic Science and Technology of China (UESTC)</i> <ul style="list-style-type: none">Built a neural network from scratch using MATLABApplied the Stochastic Gradient Descent (SGD) for model training, achieving the target accuracy after fine-tuning the parametersOptimized model training with the momentum algorithm and mini-batch gradient descent, exploring the effect of deepening the network layers	Chengdu, China <i>Feb 2022 - Jun 2022</i>

OTHER RESEARCH EXPERIENCE

The Development of an X-Ray Source Testing System Control Software <i>Independent Study supervised by Dr. Zexiang Chen, UESTC</i> <ul style="list-style-type: none">Developed communication software using C++ for host and subordinate systemsDesigned control workflow from the host computer to subordinate systems and designed the UI interfaceRealized a system for quasi real-time control between the host computer and multiple subordinate machines	Chengdu, China <i>Nov 2023 - Jun 2024</i>
A Liquid Metal-Based Microwave Switch Using Magnetic Field Actuation <i>Independent Study supervised by Dr. Yi Wang, University of Birmingham</i> <ul style="list-style-type: none">Designed and constructed circuits, used 3D printing for prototyping, and conducted tests	Birmingham, UK <i>Sept 2023 - May 2024</i>

WORK EXPERIENCE

SCLEAD <i>Research Assistant Intern</i> <ul style="list-style-type: none">Trained improved Cyclemorph model with simulated and actual astronomical images and fine-tuning parametersEvaluated the results based on SSIM and MSE to ensure accuracy and generalization	Chengdu, China <i>Jun 2023 - Jul 2023</i>
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