

**Education Background****University of Electronic Science and Technology of China (UESTC)****08/2018-07/2022**

Bachelor of Engineering in Optoelectronic Information Science and Engineering

Overall GPA: 3.84/4.0      TOEFL: 112      GRE: 328+4.0

**Awards & Honors :***Peer Reviewer for IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Letters, International Journal of Computer Vision*

Scholarship for Outstanding Student (Percentage: 15.5%), 12/2019

**International House at UC Berkeley****01-02/2019**

Leadership and Innovation Program(on campus, with certificate, no transcript)

**Publication Information**

- **C. Jin**, L. -J. Deng, T. -Z. Huang, and G. Vivone. Laplacian Pyramid Networks: A New Approach for Multispectral Pansharpening. Submitted to *Information Fusion* (minor revision)
- Z. -R. Jin, T -J. Zhang, **C. Jin**, and L. -J. Deng. Weighted Shallow-deep Feature Fusion Network for Pansharpening. *IGARSS 2021-2021 IEEE International Geoscience and Remote Sensing Symposium*, 2021.
- S. -S. Xiao, **C. Jin**, T -J. Zhang, R. Ran, and L. -J. Deng. Progressive Band-separated Convolutional Neural Network for Multispectral Pansharpening. *IGARSS 2021-2021 IEEE International Geoscience and Remote Sensing Symposium*, 2021.
- L. -J. Deng, G. Vivone, **C. Jin** and J. Chanussot. Detail Injection-Based Deep Convolutional Neural Networks for Pansharpening. *IEEE Transactions on Geoscience and Remote Sensing*, doi: 10.1109/TGRS.2020.3031366.
- YU Shiwei, **JIN Cheng**. Torpedo Tracing of Warship Escaping Along a Linear Direction. *Studies in College Mathematics*. 2019, 5.

**Professional Skills**

Python(2yrs), C(1.5yrs), LaTeX(3yrs), Matlab(2yrs), Linux(1.5yrs)

Certificate Obtained: CRAC Amateur Radio Operation License

**Internship in the Machine Learning area****Mitacs & Computational Medicine Laboratory, Western University (online program, Canada)****07-10/2021**

Will be responsible for assessment of perfusion heterogeneity in human CT data using PM3 platforms, and machine learning of segmentation

**Research Experiences****Fusion of Satellite Panchromatic Image and Multispectral Image Based on Deep Learning****04/2019-now***Laplacian Pyramid Networks: A New Approach for Multispectral Pansharpening | Major Participant**10/2019-now*

- Designed an end-to-end deep neural network structure: Laplacian Pyramid Networks based on the inspiration from the multi-scale spatial representation structure of the Laplacian Pyramid Decomposition (LPD)
- Used the Module Transfer Function (MTF) to describe the feature of each band of the multi-spectral image for image fusion
- Extensive experimental results based on quantitative and qualitative assessments exploiting benchmarking datasets demonstrate that the proposed architecture outperforms other seven state-of-the-art pansharpening methods (four are conventional methods, three are deep-learning based methods) in quality indexes SAM, ERGAS, SCC, Q2<sup>n</sup> and Qavg.

*Weighted Shallow-deep Feature Fusion Network for Pansharpening | Participant**12/2020-02/2021*

- Proposed Adaptive Skip Weighter (ASW) to perform dynamic feature graph overlay for image fusion, which helped improve limitations of ResNet

*Progressive Band-separated Convolutional Neural Network for Multispectral Pansharpening | Participant**12/2020-02/2021*

- Promoted uneven optimization results of each band in traditional methods (given the specificity of each band) by creating optimization functions for different bands to perform image fusion

*Detail Injection-Based Deep Convolutional Neural Networks for Pansharpening | Major Participant*

06-10/2020

- Reconstructed DiCNN-1 and DiCNN-2 according to the paper Pansharpening via Detail Injection Based Convolutional Neural Networks
- Conducted image fusion benchmark test for DiCNN-1, DiCNN-2, and PanNet, and compared the results with those of CS-Net, MRA-Net, and Fusion-Net
- Programmed algorithms (DiCNN-1, DiCNN-2, and PanNet) under the framework of TensorFlow using Python

**Brain-like Computational Simulation Based on Two-dimensional Materials | Participant for software part** 12/2019-12/2020

- Used PyQt5 to program the front-end Graphical User Interface (GUI) that allowed users to select suitable two-dimensional materials for their subsequent simulation work
- Assisted in 1. Carried out curve fitting to get the basic electrical characteristic parameters of the materials using Origin based on the electrical conditions of the materials provided by the hardware/material group; 2. Programmed to recognize handwritten digital image dataset (MNIST) by treating these electrical inputs/outputs as neuron nodes in a neural network

**Torpedo Tracing of Warship Escaping Along a Linear Direction | Major Participant**

12/2018-03/2019

- Built the corresponding differential equation for a random linear trajectory that a warship escapes along
- Solved the differential equation and obtained the analytic solution of the torpedo tracing trajectory, by Transformed the scene into one that the enemy ship flees in the vertical direction of our ship's coordinate axis using the coordinates rotation

### Professional Contests

- 1<sup>st</sup> Prize at the provincial level in CUMCM (Contemporary Undergraduate Mathematical Contest in Modeling) 11/2020
- 3<sup>rd</sup> Prize in the 20th Mathematical Contest in Modeling of UESTC 06/2020
- Successful Participant in the Mathematical Contest in Modeling 04/2020

### Course Projects

**Visualization of Abstract Concepts in Solid and Semiconductor Physics | Participant**

12/2020

- Assisted in the visualization work of 1. one-dimensional monoatomic lattice vibration, 2. 1st& 2nd Brillouin regions of bode-centered/face-centered/simple cubic crystals, 3. macroscopic operation of crystals via Autodesk 3DS MAX and Adobe After Effects
- Responsible for the presentation video editing work

**Segmenting and extracting the contour images of blood cells under the microscope | Independent Study**

11/2020

- Used Wavelet transform for image denoising, Histogram averaging to increase image contrast, the OTSU threshold method to binarize the images
- Used the expansion and etching methods in image morphology processing to fill/remove the invalid area, obtained contour image of blood cells after segmentation and extraction

**Design of Control Circuit of Washing Machine Based on Verilog | Independent Study**

06/2020

- Wrote the logical expression for the functions of the controller, timer, state display, control object, alarm circuit, and other modules
- Simplified the logical expression using Karnaugh Map, selected the chips for application in Multisim, and drew the basic circuit schematic diagram
- Programmed and simulated it using Vivado

### Selected Extracurricular Activities

**Applied Electronic Science and Technology Association, UESTC**

10/2018-04/2021

- Responsible for handling professional questions, such as the operation of Linux system, network configuration, programming
- Served as the keynote speaker of the annual recruitment lecture

**"Bee's Home" Volunteer Teaching Team, College of Optoelectronic Science and Engineering, UESTC**

07/2019-04/2021

- Responsible for operation of WeChat official account and participated in volunteer teaching work (reported by local TV)

- Awarded “Outstanding Volunteer” (twice), “Excellent Individual in Social Practice” (once)