Ruikai Cui

Curriculum Vitae

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EDUCATION

2019 – NOW **BEng in Advanced Computing**
GPA: 7.0/7.0; 86.9/100 (Top 3%)
Australian National University

2017 – 2019 **BEng in Computer Science and Technology**
GPA: 90.2/100 (Top 1)
Shandong University (Weihai)

EXPERIENCE

JUNE 2020 – CURRENT

Australian National University
Student Researcher

Field of Research:
- Deep Declarative Networks & Differentiable Optimization Layers
- Probabilistic Graphical Models
- Explore end-to-end methods for training Markov Random Fields

JULY 2020 – CURRENT

Australian National University
Academic Tutor

Teaching in tutorials of two courses (Intro. to ML & Algorithms) for both undergraduates and graduates.

MAR 2019 – APR 2019

Future Cup Supernova Search Challenge
Team Leader

Responsibilities include:
- Cooperate with team members
- Do literature review about Supernova Recognition
- Process a dataset with over 15,000 images and implement a CNN model to find potential supernova

DEC 2018 – MAR 2019

Shandong University
Research Assistant

Responsibilities include:
- Work with the team and provide IT support
- Develop a no-reference image quality evaluation module using OpenCV in C++
- Automate a Laser-Induced Breakdown Spectroscopy (LIBS) System

SKILLS

FAMILIAR Git, Bash, LaTeX
PROFICIENT C++, Python, Ada, Matlab
LANGUAGES English, Mandarin

ACCOMPLISHMENT & HONOR

JULY 2020 **Chancellor's Letter of Commendation**
Australian National University Link

JAN 2020 **Deep Learning Specialization**
Coursera

MAR 2019 **Province-Level Second Prize**
LanQiao Programming Competition

SEPT 2018 **First Scholarship of University**
Shandong University

PROJECTS

LIBS Autofocus System

An autofocus system for Laser-Induced Breakdown Spectroscopy (LIBS), which implemented using techniques include a no-reference image quality evaluation algorithm and the Least-Square Regression method. Link

De-Centralized Vehicle Movement Control System

An assignment of COMP2310, implemented in Ada. A robust method for coordinating vehicles in 3D space is proposed in this project. Link

Bidirectional Residual Declarative Network

A reliable framework for robust facial expression recognition. The basic architecture for the framework is ResNet-18, in combination with a declarative L_p sphere/ball projection layer and a bidirectional fully connected (FC) layer. Link

COURSES

Convex Optimization

Computer Vision

Neural Networks, Deep Learning and Bio-inspired Computing

Document Analysis

Introduction to Machine Learning

Algorithm

Principle of Computer Organization

PUBLICATION

Cui, R., Plested, J., Liu, J.: Declarative Residual Network for Robust Facial Expression Recognition. In: International Conference on Neural Information Processing