Ka Long (Eden) Au

edenau.github.io

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Education

University of Edinburgh — Edinburgh, Scotland
Doctor of Philosophy in GeoInformatics — *Sept 2018 – present*
Fully funded by NERC, and in collaboration with the MET Office
Under Edinburgh Multidisciplinary Doctoral Training Partnership (E3DTP) programme
Topic: Using machine learning to parameterize climate and weather processes: a case-study on convection
Supervisors: Prof. Simon Tett, Prof. Amos Storkey, Dr. Keith Williams

University of Oxford — Oxford, England
Master of Engineering in Information Engineering*; ranked 3rd in cohort* — *Oct 2014 – Jun 2018*
Fully funded by John Swire & Sons Ltd., and funded by college and department
Specialized in machine learning and control theory
Thesis Topic: A generic model and a distributed algorithm for station based bike sharing systems
Supervisor: Prof. Kostas Margellos

Experience

Lawrence Berkeley National Laboratory — Berkeley, CA
Research Fellow — *Jul 2019 – Oct 2019*
Developed generative deep learning models for super-resolution of cloud resolving models

Taro Studio — Edinburgh, Scotland
Co-founder — *Feb 2019 – present*
Designing a next-gen weather app that understands personalized environmental perception using machine learning

Royal Botanic Garden Edinburgh — Edinburgh, Scotland
Data Scientist — *Jan 2019 – Mar 2019*
Analyzed spatial climate data to investigate the threats to tropical forest and carbon and biodiversity loss

HYPED — Edinburgh, Scotland
Software Engineer — *Sept 2018 – Jun 2019*
Designed a pod navigation system using Kalman filter for Hyperloop, a revolutionary mode of transport

Oxford Strategy Group Digital — Oxford, England
Associate Digital Consultant — *Jan 2018 – Jun 2018*
A student-led digital consultancy in the UK
Provided digital consultancy service in data science

Projects

Codes are available on github.com/edenau.

- **Super-resolution GAN**: Leveraged SRGAN in enhancing spatial resolution of cloud resolving model outputs
- **Deep learning**: PhD project, analyzing spatio-temporal climate data by supervised learning
- **Data visualization**: visualized bike sharing systems using interactive maps and animations
- **Distributed optimization**: Master's project, constructed optimization algorithms in a distributed computing framework, and applied it to balancing bike sharing systems with significant improvement in performance
- **Camera calibration**: built a calibration algorithm for pinhole cameras by machine vision techniques
- **Engineering product design**: designed a novel prosthetics with use of fast and wireless communication protocols
- **Android APP**: designed a simple APP in four days for one to explore a city with ease
- **Interactive system design**: high school project, built a user-friendly examination sitting arrangement system

Skills

- **Programming languages**: Python, MATLAB, Pascal, LaTeX
- **Frameworks**: NumPy, Matplotlib, TensorFlow 2.0, Keras, Sphinx, Flask
- **Technologies**: GitHub, GitBook, FFmpeg, SolidWorks, Rose-Cylc
- **Natural languages**: English, Mandarin, Cantonese, Taiwanese, Spanish
- **Writing**: data science blogger on Medium @edenau
- **Public speaking**: gave talks regarding NGOs, machine learning etc.
- **Extracurricular**: Hass.io, neo-classical music, (association) football