Ka Long (Eden) Au

edenau.github.io

Education

The University of Edinburgh — Edinburgh, Scotland
Doctor of Philosophy in GeoSciences — *Sept 2018 – present*
Fully funded by NERC, and in collaboration with the Met Office UK
Under Edinburgh Multidisciplinary Doctoral Training Partnership (E3DTP) programme
Topic: Using machine learning to parameterise 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
Specialised 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

Information Services Group, The University of Edinburgh — Edinburgh, Scotland
Digital Research Services Ambassador — *Mar 2020 – present*
Identifying and documenting cases of good practice in using digital research services (e.g. HPC)
Promoting digital research services in local research communities

Medium — @edenau
Top Writer in Technology — *Dec 2018 – present*
Written articles related to Python, machine learning, statistics etc. with a total reach of 767k+

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

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

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
- **Data visualisation**: visualised bike sharing systems using interactive maps and animations
- **Distributed optimisation**: master's project, constructed optimisation 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

Skills

- **Programming languages**: Python, MATLAB, SQL, Pascal, C++
- **Markup languages**: Markdown, LaTeX
- **Frameworks**: NumPy, SciPy, Matplotlib, scikit-learn, TensorFlow 2.0, Git
- **Natural languages**: English, Mandarin, Cantonese, Taiwanese, Spanish

Posters

Au, E.K.L., Kashinath, K., Albert, A., Prabhat, M., Tett, S.F. and Brenowitz, N., 2019. Towards sub-grid scale parameterizations using a super-resolution generative adversarial network. In AGU Fall Meeting 2019. AGU.