Aaron Jordan Kaw

Curriculum Vitae

Ocean Acoustics Modeller
NW Sydney, NSW, Australia
✉ *aaronjkaw@gmail.com*
https://github.com/kapple19

Employment

2017–Current **Ocean Acoustics Modeller**, *Thales Underwater Systems*, Rydalmere Australia.
Projects include:

- Maintenance, performance analysis and reverse-engineering of existing ocean acoustics simulators in C++, producing professional documentation including derivations and analysis of the implemented models.
- Developing a Matlab library of classes and functions which implement theoretical and empirical studies for ocean acoustics propagation, producing simulations in complex ocean environments.
- Mathematical analysis of potential submarine performances for company bids, including sonar ranging and accuracy of a variety of sonar arrays.
- Production of graphical user interfaces to increase accessibility of high performance computational models for at sea and pre-and-post trial analyses for scientists, engineers, and operators.

2015–17 **Self Employed Tutor**, teaching primary and high-school students in multiple subjects, including practical piano, musical theory and mathematics.

Education

2012, 2015–2017 **Bachelor of Science (Advanced Mathematics) (Honours Class II-A)**, *University of New South Wales, Australia*.
Thesis: **Diffusion of Proteins on Cell Membranes** with Professor Adelle Coster as supervisor.

Honours research involved:

- Modelling protein motion with partial differential equations on a variety of manifolds.
- Running a high-level simulation on a cluster computer program.

Courses include:

- Fluids, Oceans and Climate
- Physics
- Atmosphere and Ocean Dynamics
- Mathematical Biology
- Differential Equations
- Probability and Stochastic Processes
- Ergodic Theory
- Applied Functional Analysis
- Linear Models
- Complex Analysis
- Computational Mathematics
- Mathematical Modelling
- Computing
- Mathematical Computing
- Several Variable Calculus
- Linear Algebra
- Theory of Statistics
- Topology and Differential Geometry
- Information, Codes and Ciphers
- Discrete Mathematics

2006–2011 **Higher School Certificate**, *Patrician Brothers' College, Fairfield*, Australia, ATAR: 90.70.

Computational Literacy and Scientific Programming

Languages & Tools

Proficient LaTeX, Matlab, Julia, Visual Studio Code, Git, GitHub, Word, Excel, PowerPoint, Outlook

Competent C++, Visual Studio

Interests and Skills

Piano Performance

- Australian Music Examinations Board: 8th Grade Practical.
- Australian Music Examinations Board: 4th Grade Theory.
- International Convention Centre, audience of 8000, accompanying a professional violinist, 25 minute performance.
- Ryde Eisteddfod Inc. Competition, 1st Place.
- Countless accompaniments for vocalists, instrumentalists, and choirs.

Learning Goals and Continuous Developments

- Machine Learning
- Differential Equations
- Visualisation Programming
- Atmospheric Dynamics

Other Interests and Skills

- Electric Skateboarding
- Surfing
- Snowboarding
- Hiking
- Religious Service (Mission: 2013–2015)
- Escape Rooms
- Rhythm Games
- Reading (Science)
- Puzzles
- Typing Speed: 83 WPM

References

Profession

Patrick Cooper
Patrick.Cooper@thalesgroup.com.au

Academia

Prof. Adelle Coster
A.Coster@unsw.edu.au

Musicianship

Adam Aalders
AaldersAJ@ldschurch.org

Personal

Heisun Ma
HeisunMa@gmail.com