

# ADAM GOODGE

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## EDUCATION

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### National University of Singapore (NUS)

(2018-Present)

Undergoing my PhD in the School of Computing and recipient of the SINGA scholarship from the Agency for Science, Technology and Research (A\*STAR), Singapore

- **Dissertation Title:** "Towards Robust and Adaptive Anomaly Detection with Deep Learning"
- **GPA:** 4.42/5.00
- **Classes:** Neural Networks and Deep Learning | Advanced Topics in Machine Learning | Advanced Algorithms | Logic in Artificial Intelligence | The Art of Computer Science Research | Theory and Algorithms in Machine Learning
- **Conference Publications:**
  - "Robustness of Autoencoders for Anomaly Detection Under Adversarial Impact", *A. Goodge, B. Hooi, SK. Ng and WS. Ng*, International Joint Conference on Artificial Intelligence (IJCAI) 2020.
  - "LUNAR: Unifying Local Outlier Detection Methods via Graph Neural Networks", *A. Goodge, B. Hooi, SK. Ng and WS. Ngs*, AAAI Conference on Artificial Intelligence (AAAI), 2022
  - "ARES: Locally Adaptive Reconstruction-based Anomaly Scoring", *A. Goodge, B. Hooi, SK. Ng and WS. Ng*, [Under review]
  - "CADET: Calibrated Anomaly Detection for Mitigating Hardness Bias", *A. Deng, A. Goodge and B. Hooi*, [Under review]
- **Awards:**
  - Recipient of the Amazon Science scholarship award at AAAI2022 (2022)
- **Research interests:** Anomaly/outlier detection, unsupervised learning, machine learning applications, graph neural networks

### University of Nottingham, United Kingdom

(2017-2018)

PGDip in Efficient Fossil Energy Technology (Distinction)

- A rigorous postgraduate diploma programme to develop technical and professional skills for the energy sector
- **Classes:** Scientific Computing and C++ | Data Modelling | Computational Fluid Dynamics | Power Generation and Carbon Capture | Energy Systems | Research Skills & Commercialisation

### University of Birmingham, United Kingdom

(2013-2017)

MSci Natural Sciences, with major in mathematics (First Class)

- Masters project in mathematical modelling and computational fluid dynamics
- **Mathematics classes:** Advanced Numerical Methods | Differential Equations | Continuum Mechanics | Integer & Linear Programming | Combinatorial Optimisation | Probability and Statistics | Linear Algebra | Mathematical Finance | Real and Complex Analysis | Multivariate and Vector Analysis
- **Other classes:** Earth and Ecological Systems | Sustainable Development | Hydro-climatology | Environmental Management | Micrometeorology

- **Awards:**
  - 'Distinction Prize': deemed 'worthy of distinction' by the Board of Examiners (2016)
  - 'Senior Tutor's Prize': the top student of the cohort over the first two years (2015)
  - 'Personal Skills Award': demonstrating desirable skills such as strong leadership, teamwork, and communication (2015)

## **SKILLS & EXPERIENCE**

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### **Software/IT**

- Extensive experience with Python and key libraries for machine learning: Numpy, Pandas, Scikit-learn, Keras, PyTorch and Tensorflow
- Experience with C++, R, SQL and MATLAB
- Microsoft Office and LaTeX proficient

### **Experience**

- 2020: Teaching assistant for 'Knowledge Discovery and Data Mining' masters course at NUS and general mentoring of master students
- 2019-2020: A\*STAR SINGA Ambassador: organising events, social media presence and communications with prospective scholars on behalf of the SINGA programme
- 2016-2017: Elected student representative of Japanese class, liaising with students and staff to address issues and improve the programme
- 2015: Work experience in the Pricing Analysis team at Admiral Insurance UK, investigating and analysing competitor pricing techniques
- 2013: 'Maths Leaders Challenge': developing and conducting mathematics lessons for struggling GCSE students

### **Additional Information**

- British citizen living in Singapore since 2018
- Member of the Pattern Recognition and Machine Intelligence Association