Dr. Han Liang Wee, Eric

+6592982927 mail@eric-han.com eric-han.com eric_vader eric-vader

Experience

National University of Singapore

8 Aug 23 - 30 Jun 24 | *Teaching Assistant*
Continues from previous: Teach lectures, tutorials and consultations; Grading; Manage tutors; Mentor new tutors; Develop grading rubrics, exam questions and module tools; Taught 2 Sophomore-level, 8 Junior-level modules with more than 500 teaching/contact hours.

8 Aug 18 - 7 Aug 23 | *Graduate Tutor*

Agency for Science, Technology and Research

Dec 15 | *Research Intern – A Cloud-based Collaborative Model Building Platform*
Continues from previous: Design, implement & deploy dockerized, distributed ML platform.

May 15 - Jun 15 | *Research Intern – Autonomous Machine Learning using HPC Approaches*

Jan 13 - Jul 13 | *Research Intern – Route My Day (Recommendation System)*
Design, implement & deploy visualization website, distributed web crawler & MongoDB cluster.

Education

Doctor of Philosophy (PhD) in Computer Science, National University of Singapore

Aug 18 - Jan 24 | *Focus is in AI / Machine Learning / Optimization - High-Dimensionality and Robustness.*

Bachelor of Computing (Computer Science), National University of Singapore

Aug 13 - Jan 18 | *Graduated With Honours (Highest Distinction) in Computer Science, with Turing Programme*

Achievement

Awards

21 Apr 23 | *Full-Time Teaching Assistant Award, National University of Singapore*
Recognition of the high level of commitment to, and achievement of good teaching.

21 Jun 18 | *Outstanding Undergraduate Researcher Prize 2017/18, National University of Singapore*
Individual prize; Final Year Project - Feature Subset Selection using Reinforcement Learning.

15 Jan 18 | *Dean's List Recipient, National University of Singapore*
Named to Dean's List for meritorious performance in S1 AY17/18.

Scholarships

25 Jul 12 | *A*STAR Undergraduate Scholarship, Agency for Science, Technology and Research*
Prestigious scholarship awarded to budding scientists.

Research

Peer-Reviewed Conference Publications

Jul 22 | ***Structured Dimensionality Reduction Methods for Black-Box Adversarial Attacks with BO***
Eric Han, Jonathan Scarlett
Ongoing / Under Review
Apply Bayesian Optimization (BO) to conduct adversarial attacks on Convolutional Neural Networks (CNNs) in a black-box hard-label setting, leveraging domain knowledge (Tiling Transform for ℓ_∞ and Fourier Transform for ℓ_2) for dimensionality reduction and introducing query-efficient hyperparameter selection techniques.

Jul 22 | ***Adversarial Attacks on Gaussian Process Bandits***
Eric Han, Jonathan Scarlett
Proceedings of the 39th International Conference on Machine Learning
Investigates adversarial attacks on Bayesian Optimization by proposing various attack methods tailored to the attacker's knowledge and strength, demonstrating that these attacks can effectively manipulate the algorithm's output even with a limited budget.

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Feb 21 | ***High-Dimensional Bayesian Optimization via Tree-Structured Additive Models***
Eric Han, Ishank Arora, Jonathan Scarlett
Proceedings of the 35th AAAI Conference on Artificial Intelligence
Scales Bayesian Optimization to higher dimensions by learning tree-structured dependency graphs, introducing a hybrid graph learning algorithm and a novel zooming-based method for continuous space optimization, trading off model complexity for improved efficiency and maintained sample efficiency, and has inspired subsequent research using random tree decompositions.

Service

Service to Research Community

23 Feb 23 | *Student Volunteer for 34th International Conference on Algorithmic Learning Theory.*

20 Jan 23 | *Session Chair for Workshop on Information Theory and Data Science Workshop.*

11 Apr 22 | *Reviewer for 39th International Conference on Machine Learning.*

Service to National University of Singapore

8 Apr 22 | *Admission reviewer for Master of Computing applicants (Aug 2022).*

3 - 5 Aug 21 | *Program Committee for NUS Computing Research Week 2021.*
Moderator of the technical panel discussion titled ‘Heterogeneity in Federated Learning’.

26 Apr 21 | *Admission reviewer for Master of Computing applicants (August 2021).*

Service to Agency for Science, Technology and Research

Jun 19 | *Guidance to junior scholar – sharing of experiences.*

4 Dec 15 | *Invited Speaker for A*STAR Scholarships Seminar for Undergraduate Studies.*

Service to Impact Life Church

Mar 18 - Dec 23 | *Head Of Information Technology – Lead a team of >15 volunteers.*
Responsible for IT infra., purchasing, software development of Church applications, etc.

Competency

Computing Platforms

> | *Programming Languages*
Python, C++, Java, HTML/CSS, Java/Typescript, Bash.

> | *Numerical Computing*
NumPy, SciPy, PyTorch, GPy, etc…

> | *Databases*
Firebase, SQL, MongoDB.

> | *Typesetting / Presentation Tools*
LaTex, Markdown, Microsoft Office, Google Workspace.

> | *Tools / Platforms*
Git, Mlflow, Plotly, Matplotlib, Slurm, Jira, Google Cloud Platform.

> | *Operating Systems*
Linux (Fedora; daily driver), *nix administration, Windows, macOS.

Language Proficiency

> | *English (Native) and Chinese (Intermediate).*