Apivich Hemachandra (Kaotoo)

PhD Student in Computer Science

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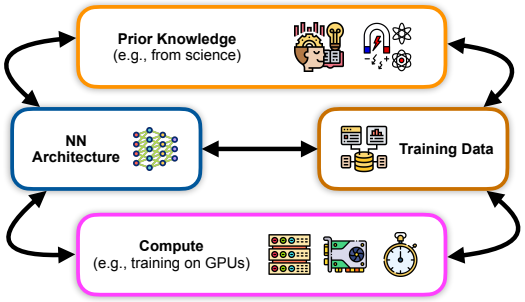
This CV was last updated on 6 January 2026. A more updated version may be found at https://apivich.me/cv/cv.pdf.

Research Interests

I am generally interested in resource-efficient ML, particularly the (co-)optimization of different training components. Some of the specific topics include:

- Physics-informed ML (combining scientific domain knowledge with active data selection)
- Compute-aware machine learning (combining compute resource constraints with data and model selection methods)
- Active learning and Bayesian optimization



Education

August 2021 – Present: Doctor of Philosophy (Computer Science)
School of Computing, National University of Singapore (NUS), Singapore

- Under the co-supervision of See-Kiong Ng and Bryan Kian Hsiang Low.
- Funded under the NUS Research Scholarship.

September 2016 – July 2020: Bachelors of Science (Physics)
Mahidol University International College (MUIC), Thailand

- Completed with minors in Computer Science and Mathematics.
- Cumulative GPA of 3.99 out of 4.00 (First-Class Honours).
- Recipient of Academic Achievement Awards in 2017, 2018 and 2019.
- Also was on exchange at University of Wisconsin-Madison during Fall 2018 (3rd year of study).

Publications

(Note: † denotes equal contribution.)

Conference Publications

1. **PIED: Physics-Informed Experimental Design For Inverse Problems**.
   Apivich Hemachandra†, Gregory Kang Ruey Lau†, See-Kiong Ng, Bryan Kian Hsiang Low.
   ICLR 2025 Poster. Acceptance rate: 32%.
2. **PINNACLE: PINN Adaptive ColLocation and Experimental points selection**.
   Gregory Kang Ruey Lau†, Apivich Hemachandra†, See-Kiong Ng, Bryan Kian Hsiang Low.
   ICLR 2024 Spotlight. Acceptance rate (spotlight): 5%.
   Also Best Paper at ICML 2024 AI for Science Workshop.
3. **Training-Free Neural Active Learning With Initialization-Robustness Guarantees**.
   Apivich Hemachandra, Zhongxiang Dai, Jasraj Singh, See-Kiong Ng, Bryan Kian Hsiang Low.
   ICML 2023 Poster. Acceptance rate: 28%.

Workshop Publications

1. **OPPA: OPtimizing PArallelism for Language Model Training**.
   Apivich Hemachandra, Yizhan Han, See-Kiong Ng, Bryan Kian Hsiang Low.
   ICLR 2025 Workshop on Scalable Optimization for Efficient and Adaptive Foundation Models.

Work Experience

August 2020 – June 2021: Data Analyst, The Gang Techology Co. Ltd., Thailand

- Work on projects outsourced from PTTEP (a Thai petroleum extraction firm), that involves data analytics and decision making under economic, physical or geographical constraints.
- Also have other short-term projects with PTTEP in 2019 and 2020 while at MUIC.

August 2019: Research Internship, Vidyasirimedhi Institute of Science and Technology, Thailand

- Worked on project focusing on active data selection for training neural machine translation models, which was eventually incorporated into my senior thesis.

Teaching Experience

Teaching Assistant at School of Computing, NUS

- CS3244 Machine Learning (S1, AY2023-24; S1 AY2024-25)
- CS3264 Foundations of Machine Learning (S2, AY2022-23; S2, AY2023-24; S2, AY2024-25)
- *Average teaching rating (across all semesters) of 4.5 out of 5.*
- *Several recognition by School of Computing, including being under the Teaching Fellowship for 3 consecutive years and being on the Honour List of Student Tutors.*

Teaching Assistant at MUIC

- ICCS200 Data Structures and Algorithms (T3, AY2018-19; T1, AY2019-20)
- ICPY132 Principles of Physics (T1, AY2017-18)

Awards and Competitions

June 2023 – June 2026: Recipient of SoC Teaching Fellowship Scheme

- Awarded annually to five CS PhD students at SoC with excellent past performances as a tutor, and renewed given continued good performances as a tutor.

December 2025: NUS SoC Honour List of Student Tutors

- Awarded by NUS School of Computing to recognise excellence in teaching among student tutors.

August 2023 and January 2025: Recipient of SoC Research Achievement Awards

- Awarded for research achievements in Semester 2 AY2022-23, and in Semester 1 AY2024-25.

April 2018: Winner of FameLab Thailand

- A competition hosted by British Council Thailand where competitors gave a three-minute presentation about a scientific topic of their choice to a general audience.
- Also was selected as the representative for Thailand at FameLab International 2018 at Cheltenham Science Fair, United Kingdom.

Skills

Mathematics Courses

Multivariate Calculus, Linear Algebra, Real Analysis, Discrete Maths, Statistics.

Computer Science Courses

Data Structures & Algorithms, Advanced/Contemporary Algorithms, Machine Learning, Numerical Methods, Introduction to Optimisation, Object-Oriented Concepts.

Programming

Experiences with writing projects in Python (primary language of choice), Java, C++, and Julia.

Language

Thai (native speaker), English (fluent).

Standardised Scores

- TOEFL iBT: 114 out of 120 (taken in Jan 2020),
- IELTS: 8.5 out of 9.0 (taken in Jan 2018),

Personal Interests

Video Making - RandomMathsInc

- URL: `https://www.youtube.com/c/RandomMathsInc`
- A channel with around 12k subscribers (as of January 2024), which present topics in mathematics, physics and computer science often in entertaining ways.
