

Tham Yik Foong



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Profile Summary

Currently a Ph.D. student at Laboratory of Intelligent Systems, Kyushu University, with research interests lie in **Reinforcement Learning, Intelligent Agent System, Neural Network** and **Reservoir Computing**. Contain experience as a software engineer and have acquired knowledge of product manufacturing and software architecture design. Committed to professional development and continuous learning in the field of AI, while also having a genuine interest in artificial general intelligence. Currently looking to fill a position as an assistant professor.

Academic Training

PhD	Artificial Intelligence Laboratory of Intelligent Systems, Kyushu University (2021 – 2024 Oct) Supervised by Dr Danilo Vasconcellos Vargas
MSc	Machine learning in Science University of Nottingham (2019 – 2020) With Distinction
BSc (Hons)	Bachelor of Software Engineering with Multimedia Limkokwing University (2015 – 2017) CGPA: 3.9/4.0 (First Class)

Career Summary

Dec 2020 – Jun 2021	Teacher/AI Instructor (Contract) ORBIX International Schools/AI Academy
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Outline

Create lesson plans and teach in PE, AI, and Computer Science for Year 2 to Year 11 students. Other duties involved creating teaching materials in collaboration with iFLYTEK AI, curriculum development and planning, and managing campus IT infrastructure. This role was a contract job, undertaken to acquire teaching experience and to fill the gap during the Covid-19 outbreak before commencing my PhD.

Key Responsibilities

- Develop and deliver lesson plans, curriculums and teaching materials.
- Manage campus IT systems, address technical issues, and ensure optimal functionality.
- Engage with students, parents, and iFLYTEK AI to support learning and student admissions.

Mar 2018 – July 2019

**Software Engineer (ATTD Department)
Intel**

Outline

Develop station controller (machine controller) that communicates with equipment and backend system, controlling the business flow of product manufacturing. This position required knowledge of object-oriented programming and design pattern, understanding the business process of product manufacturing, communication skill as this position work closely with individuals from different factory sites across different countries.

Key Responsibilities

- Develop station controller in C# and gather requirements from tech lead and customer (module integrator)
- Testing station controller to ensure it runs smoothly in production environment
- Provide code level technical support
- Assigned to compose a station controller development guide and provide coaching for peer and new hire

**July 2017 – Sept 2017
(6 Sessions)**

**Tutor
MY EDVENTURE**

Outline

As a tutor of MyEdventure coding Bootcamp, teaching subject includes HTML, CSS, Javascript.

Key Responsibilities

- Prepare teaching material
- Teaching and provide guidance

Jun 2017 – Sept 2017

**Web Developer Intern
TIME.COM**

Outline

Design and develop webpages for one of the major ISP in Malaysia.

Key Responsibilities

- Design and develop webpages, company internal web tool, online survey form using HTML, CSS, Javascript and PHP

Grants

SPRING Integrated Research Project for FY2023, “Intelligent Agent-Driven Active Brownian Particles: Self-Organization and Dynamics of Collective and Vortical Motion”, Award amount: 500,000¥.

JST SPRING, Research Aid, Award amount: 200,000¥ per month, April 2022 – present.

ASEAN Masters Scholarship, September 2019 – September 2020

Awards

Travel Grant for CogSci 2023, Award amount: 178,000¥

Best Presentation Award, 2022 5th Artificial Intelligence and Cloud Computing Conference, for Tham Yik Foong: Understanding SyncMap: Analyzing the Components of its Dynamical Equation.

Publications

TY Foong, DV Vargas (2024): Robust Nonlinear Dynamics Conditions That Arise in Self-Oscillatory Networks. Under review.

TY Foong, H Zhang, P Mao, DV Vargas (2024): Adapting to Covariate Shift in Real-time by Encoding Trees with Motion Equations. Under review.

P Mao, Shashank, TY Foong, DV Vargas (2023): Synthetic Shifts to Initial Seed Vector exposes the Brittle Nature of Latent-Based Diffusion Models. Under review.

TY Foong, Shashank, P Mao, DV Vargas (2023): The Challenges of Image Generation Models in Generating Multi-Component Images. Under review.

TY Foong, DV Vargas (2023): Generating Oscillation Activity with Echo State Network to Mimic the Behavior of a Simple Central Pattern Generator. *In Proceedings of the Annual Meeting of the Cognitive Science Society, volume 45*. (Oral paper, 17% acceptance rate)

Video: <https://youtu.be/Y46QJx1Fc0Q>

Presentation: <https://doi.org/10.48448/n2fz-wy85>

P Mao, Y Tham, H Zhang, DV Vargas (2023): Magnum: Tackling high-dimensional structures with self-organization. In *Neurocomputing, volume 550*.

DV Vargas, TY Foong, H Zhang (2023): Dynamical Equations with Bottom-up Self-Organizing Properties Learn Accurate Dynamical Hierarchies Without Any Loss Function. Under review.

Video: <https://youtu.be/kWhTJG5XYmQ>

TY Foong, DV Vargas (2022): Understanding SyncMap: Analyzing the components of Its Dynamical Equation. In *Proceedings of the 2022 5th Artificial Intelligence and Cloud Computing*. (Best Presentation Award)

TY Foong, DV Vargas (2021): Towards Learning Hierarchical Structures with SyncMap. In *2021 5th IEEE International Conference on Cybernetics (CYBCONF)*.

TY Foong, T Oakes (2020): Master Thesis: Using Reinforcement Learning to model Collective and Adversarial Behaviours with Active Brownian Particles.

Blog: <https://zfoong.github.io/blog/collective-x-adversarial-ams.html>

Languages

English (IELTS overall marking: 7.0) • Bahasa Malay • Cantonese • Chinese • Japanese (N2)

Any transcripts, additional documents and references are available on request.