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Hong Kiat, Tan

Education

University of California, Los Angeles

- **Ph.D.** Candidate, Applied Mathematics (GPA: 3.98/4.00) Aug 2021 - Jun 2026 (Expected)
- **Masters of Arts** in Mathematics Aug 2021 - Jun 2022

National University of Singapore

- **Bachelor of Science (Honours)** in Applied Mathematics with Highest Distinction. Aug 2017 - May 2021
- Second Major in Physics and Minor in Statistics, with 28 A+'s in Math/Physics/Statistics courses. (CAP: 4.97/5.00)

Publications

- *Weak Cosmic Censorship Conjecture for the Spherically Symmetric Einstein-Maxwell-Charged Scalar Field System.*
  X. An, **H.K. Tan**. || arXiv preprint arXiv:2402.16250.
  Topics: Analysis of Partial Differential Equations (PDEs), General Relativity.
- *Regularization of Complex Langevin Method.*
  Z. Cai, Y. Kuang, **H.K. Tan**. || Physical Review D 105 (1), 014508.
  Topics: Numerical Analysis, Quantum Mechanics.
- *Hierarchical Bayesian Thermonuclear Rate for the 7Be (n, p) 7Li Big Bang Nucleosynthesis Reaction.*
  R.S. de Souza, **H.K. Tan**, A. Coc, C. Iliadis. || The Astrophysical Journal 894 (2), 134.
  Topics: Bayesian Statistics, Astrophysics.

Honours and Awards

Award	Description	Year
Dean's List	Top 5% of students, AY 18/19, 19/20, 20/21, Sem I & II	2018 - 2021
Ho Family Prize	Best overall student in Applied Math, AY 20/21	2021
Honour List of Student Tutors	Excellence in Teaching, AY 19/20, 20/21	2020, 2021
Tan Siak Kew Gold Medal	Best student in Science III, AY 19/20	2020
Tan Teck Chwee Prize	Best student in Applied Math III, AY 19/20	2020
Sembcorp Marine Prize	Top 2 students in Physics III, AY 18/19	2019
Arthur Rajaratnam Prize	Best student in Experimental Physics I, AY 18/19	2019
Jurong Shipyard Prize	Top 2 students in Physics I, AY 17/18	2018
NUS Merit Scholarship	Awarded to support my undergraduate studies	2017

Work Experiences

Graduate Research Assistant, UCLA 2022 - Present

- Coded a continuum traffic network model from scratch in Python, incorporating data to investigate its efficiency.
- Utilized differential topology and functional analysis to analyze PDE models motivated by experiments in fluid dynamics.

Graduate Teaching Assistant, UCLA 2021 - Present

- Classes and Teaching Feedback Scores:

Code	Class	Iteration	Effectiveness	Availability
Math 174E	Math of Finance for Math/Econs	Spring 2024	8.06/9.00	8.17/9.00
Math 266B	Applied PDEs (Graduate)	Winter 2024	8.86/9.00	9.00/9.00
Math 135	Ordinary Differential Equations	Fall 2023	8.88/9.00	9.00/9.00
Math 134	Linear and Nonlinear Systems of DEs	Spring 2023	8.57/9.00	8.86/9.00
Math 170E	Introduction to Probability	Winter 2023	8.38/9.00	8.25/9.00
Math 131A	Analysis	Summer 2022	8.47/9.00	8.53/9.00
Math 136	Partial Differential Equations	Spring 2022	8.83/9.00	8.82/9.00
Math 32BH	Calculus of Several Variables (Honors)	Winter 2022	8.67/9.00	8.89/9.00
Math 134	Linear and Nonlinear Systems of DEs	Fall 2021	8.67/9.00	8.79/9.00

Undergraduate Teaching Assistant, NUS 2019 - 2021

- Served as a TA for discrete structures and programming methodology in Python for 5 semesters.

Undergraduate Research Assistant, UNC - Chapel Hill 2019

- Performed data analysis on astrophysical thermonuclear reaction rates using hierarchical models in Bayesian statistics.

Technical Skills

- *Programming Languages*: Python (Proficient), R (Proficient), LaTeX (Proficient), Wolfram.
- *Languages*: English & Mandarin Chinese (Native/Bilingual), Japanese (Elementary).