Calvin Khor, Ph.D.

✉ calvin_khor@hotmail.com   🌐 clvnkhr.github.io   📞 +44 (0) 7801 268 228
 https://github.com/clvnkhr/   iD Publications: orcid.org/0000-0001-7557-0786

Mathematician and aspiring data scientist with a passion for software and technology. Strong analytical skills from four years of post-doctorates in large research groups, with six co-authors and publications in respected journals cited by leading experts. Constantly driven to learn and improve my understanding in statistics, programming, and computer science. After participating in the QRT 2023 prediction challenge, I have developed a keen interest in applying my research and development skills to solve problems using machine learning.

Employment History

2021 —2023 **Postdoctorate Researcher.** *Computational Science Research Center, Beijing.*
Research focused on rigourous ill-posedness results in advanced PDEs in fluid dynamics, using spectral theory, harmonic analysis, and convex integration. Led discussions on new research directions for group of 20 researchers.

2019 —2021 **Postdoctorate Researcher.** *Beijing Normal University, Beijing.*
Research focused on the persistence of geometrical structures in fluid dynamics using commutator estimates in Besov spaces and the energy method. Taught classes on Advanced PDE theory and microlocal analysis. Discussed and presented important research papers in the field of PDE theory.

Selected Publications

2023 C. Khor, C. Miao and X. Su, *Non-uniqueness of Leray–Hopf solutions to the forced fractional Navier–Stokes equations in 3 dimensions, up to the J. L. Lions exponent.* Bull. London Math. Soc.. DOI:10.1112/blms.12889

2022 C. Khor, X. Xu, *Temperature patches for the subcritical Boussinesq–Navier–Stokes system with no diffusion*, Journal of Functional Analysis, Volume 283, Issue 2, DOI:10.1016/j.jfa.2022.109501

Higher Education

2015 —2019 **University of Warwick, Ph.D.** in Pure Mathematics. Fully funded by the ERC. Supervisor: Prof. José Rodrigo.
Thesis title: Sharp Fronts and Almost-Sharp Fronts of A Singular Surface Quasi-Geostrophic Equation.

2011 —2015 **University of Warwick, MMath.** First Class Honours. (top 15 of graduating class)
First Year: 90%   Second Year: 89%   Third Year: 100%   Fourth Year: 92%

Skills

Languages **Fluent in English.** Conversational in Mandarin Chinese and Bahasa Malaysia.

Coding **Python,** Scala, LaTeX, Typst, SQL, HTML, CSS, Javascript, and Lua

Relevant Experience

2023 Top 2% rank in QRT 2023 prediction challenge using Python data science and machine learning tools such as numpy, scipy, pandas, matplotlib, and pipelines with custom scikit-learn estimators; see write-up.

Attended Anthropic AI Hackathon on building apps with Claude 2.0 LLM.

Participating in reading group on Machine Learning at the London South Bank University.

Building knowledge in finance, probability and machine learning via online courses.

Contributed to the open source Python tool pipreqs and created a Neovim plugin macaltkey.nvim.

Discovered integer sequences A364353 and A364354 and added them to the OEIS.

2022 Developed skills in computer science and programming via online courses by Harvard and EPFL.

Presented research at the Peking University Beijing International Center for Mathematical Research.

2021 Led discussions on new research directions for group of about 20 researchers in fluid mechanics.

2020 Taught mini-course on microlocal analysis and the pseudodifferential calculus to about 20 students.

Discussed and presented important research papers in the field of theoretical PDEs to a group of about 20 researchers at Beijing Normal University.

2019 Taught course in Advanced Partial Differential Equations, teaching rigourous proofs in advanced real analysis.