

# Shun Yin Cheung

PhD Candidate — Data Scientist & Quantitative Researcher      Affiliations: Monash University, Ozgrav  
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<https://github.com/ShunYCheung>

## EXECUTIVE SUMMARY

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Data scientist and quantitative researcher with PhD-level experience in statistical modeling, probabilistic machine learning, and large-scale data analysis. Proven track record building end-to-end analytical pipelines to extract weak signals from noisy, real-world data using Bayesian inference and flexible models with minimal assumptions. Strong Python software engineer designing robust, interpretable models, validating results under uncertainty, with experience using high-performance computing. Approach problems with rigorous thinking and communicating complex results clearly to technical and non-technical stakeholders.

## EXPERIENCE

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### Astrophysics PhD Candidate

*Monash University*

March 2023 — Current

- Designed and implemented end-to-end analysis pipelines to compare competing models against large observational datasets, explicitly quantifying uncertainty and evidence for each hypothesis.
- Processed and analysed large volumes of time-series data, performing filtering and cleaning to isolate relevant signal content.
- Built flexible, assumption-light Bayesian models to support robust decision-making and detect subtle short duration patterns in noisy data.
- Applied rigorous model validation techniques including background studies, simulation-based testing, and false positive controls.
- Aggregated results across dozens of independent datasets to infer population-level trends, while accounting for variability in data quality.
- Advance Python development with modular and testable codebases.
- Used version control with continuous integration workflows to develop reproducible reliable data-analysis pipelines.
- Extensive experience running large inference workloads on high-performance computing systems.

### Postgraduate Representative

*Monash University*

July 2024 — December 2025

- Volunteered as a representative for postgraduates, acting as a liaison between the cohort and staff.
- Provided peer support and guidance to fellow PhD students, helping them navigate concerns and directing them to appropriate institutional services when needed.
- Organised and coordinated community-building initiatives, including social and networking events, to strengthen engagement and communication within the cohort.

### Teaching Assistant

*Monash University*

February 2024 — Current

- Supervised and supported students in teaching environments, ensuring safety and clear instructions.
- Assessed and evaluated student work and providing constructive feedback.
- Invigilate formal assessment, ensuring fairness, integrity and adherence to procedures.

## EDUCATION

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**Monash University**, Melbourne, Australia  
Doctor of Philosophy (PhD), Astrophysics

March 2023 – Present

**Monash University**, Melbourne, Australia

March 2019 – December 2022

Bachelor of Science (Advanced) – Research (Honours)

First-Class Honours

Honours Thesis: *Ultrafast Carrier Dynamics in 2D MoS<sub>2</sub> using Time-Resolved Pump-Probe Terahertz Spectroscopy*

## SKILLS

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- Signal Processing and Time-Series Analysis
- Probabilistic Modelling and Uncertainty Quantification
- Python and Numerical Computing
- Version Control with Automated Testing/CI Workflows
- High-Performance Computing and Large-Scale Analysis
- Communication with Technical and Non-Technical Stakeholders