

Jon Cheah | Curriculum Vitae

Department of Mathematics, The University of Hong Kong

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Education

PhD

Supervisor: Prof. Zheng Hua

The University of Hong Kong, HK

2022–2027

MMath (Integrated Masters)

Supervisor: Prof. Dmitry Rumynin

University of Warwick, UK

2018–2022

Research Interests

Algebraic geometry, Lie theory, cluster algebras, representation theory.

Preprints and publications

1. **Frayed Demazure weaves for Poisson-compatible cluster structures on Bott–Samelson charts.** Preprint, arXiv:2606.05823.
2. **On upper bounds of frieze patterns.** With A. de Saint Germain. *The Fibonacci Quarterly* **63** (2025), 98–106.

Undergraduate Projects

Master's dissertation

Real McKay Correspondence: KR-Theory of Graded Kleinian Groups

2021–2022

Supervisor: Prof. Dmitry Rumynin

3rd year project

Invariant Theory: The Symbolic Method and Geometry

2020–2021

Supervisor: Prof. Christian Böhning

Undergraduate Research Project

Finite subgroups of $SL_2(\mathbb{C})$

Jul–Sep, 2020

Supervisor: Prof. Miles Reid. Funded by Univ. of Warwick and the London Mathematical Society

2nd year essay

Braid Groups

2019–2020

Conference paper submitted to ICCEM 2020

3-D Printed Circularly Polarized Terahertz Lens for Bessel Beam Generation

Jul–Sep, 2019

Joint with Yat Long (Jeffrey) Yeung, Geng-Bo Wu, Ka Fai Chan, Chi Hou Chan

Teaching

The University of Hong Kong

2026 Spring: MATH1009 Basic Mathematics for Business and Economics, Teaching Assistant

2025 Autumn: MATH3541 Introduction to Topology, Teaching Assistant

2025 Spring: MATH2102 Linear Algebra II, Teaching Assistant

2024 Autumn: MATH3541 Introduction to Topology, Teaching Assistant

2024 Spring: MATH4302 Algebra II, Teaching Assistant

2023 Autumn: MATH3541 Introduction to Topology, Teaching Assistant

2023 Spring: MATH3303 Matrix Theory and Its Applications, Teaching Assistant

- Prepared tutorial materials with extra examples and problems designed to complement the lectures.
- Ran weekly tutorials which discussed the problems and presented possible solutions.
- Moderated the Moodle forums, made announcements, clarifications, and answered online questions.
- Held weekly office hours for students to ask questions in private and clarify uncertainties.
- Crafted assignment sheets in line with lead instructor's aims for the course and final exams.
- Wrote detailed solutions for assignments and midterms, highlighting the key insights needed.
- Marked assignment submissions promptly with informative feedback and encouragement.
- Invigilated midterms and exams, responding promptly to student requests.

University of Warwick

2021–2022: Graduate Teaching Assistant: Undergraduate Supervisor

- Marked assignments for 5 first-year undergraduate students across 5 modules.
- Organised twice weekly supervisions of problems, examples and assignment feedback.

2019 Autumn: Peer Tutor for MA131 Analysis I

Talks

Jul 2026: Frayed Demazure weaves for Poisson-compatible cluster structures on Bott–Samelson charts, contributed talk at the ICRA 2026

Dec 2025: An advertisement for cluster algebras, Waterloo pure mathematics grad colloquium.

Oct 2024: Plabic graphs and clusters on strata of Grassmannians, one day workshop at CUHK(Shenzhen)

Apr 2024: Preprojective algebras via Serre functors and HRS-tilting, DOGS Seminar

Jan 2024: Lifting open Richardson closure relations to categories, HKU qualifying research seminar

Sep 2023: Relative Bruhat decomposition for reductive group schemes, HKU student seminar

Service

2024–26: Senior Equal Opportunity Student Ambassador at HKU

2025 Autumn: Mentor for a Twoples research project

2023–24: Equal Opportunity Student Ambassador at HKU

2023–Present: Research Postgraduate Wellness Ambassador at HKU

2023 Autumn: Peer English Tutor at HKU

Computer skills

Programming: MATLAB, MAGMA, SageMath, $\text{\LaTeX}$, LEAN

Digital Tools: Ed, Gradescope, Microsoft Teams, Miro, Moodle, Zoom