ZHENG Renpeng

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Education

- **Imperial College London** — London, UK
  Master of Science in Pure Mathematics. — *Oct. 2021 – Oct. 2022*
  - **MSc Thesis**: Topic: Toric Varieties, Supervisor: Dr. Jonathan Lai.
  - **Courses**: *Algebraic Curves* (A), *Manifolds* (A+), *Commutative Algebra* (A+), *Group Representation Theory* (A+), *Algebraic Geometry* (A+), *Complex Manifolds* (A), *Differential Topology* (A+) and *Riemannian Geometry* (A+).
- **The Chinese University of Hong Kong, Shenzhen** — Shenzhen, China
  Bachelor of Science in Mathematics and Applied Mathematics: Pure Mathematics stream. — *Aug. 2017 – July. 2021*
  - **Degree**: BSc with Honours, **First Class**
  - **Grade**: Cumulative GPA 3.495/4.000, major GPA 3.794/4.000.
  - **Selected Courses**: *Differential Geometry*, *Introduction to Geometry and Topology*, *Advanced Linear Algebra*, *Abstract Algebra*, *Complex Variables*, *Real Analysis*, *Partial Differential Equations*, *Probability Theory*, *Functional Analysis*.
  - **Awards**: AY2019-20/2020-21 Dean's List Award of School of Science and Engineering.
- **University of California, Berkeley** — Berkeley, CA, US
  Summer Session Visiting Student — *Jun. 2018 – Aug. 2018*
  - **Courses**: *Abstract Algebra* and *Research & Data Analysis*

Academic Activities

- **MSc Project**
  Toric Varieties — *Nov. 2021 – Oct. 2022*
  - Writing a thesis on toric varieties under the supervision of Dr. Lai.
- **Study Group**
  Birational Geometry — *Oct. 2022 – Dec. 2022*
  - Attending a weekly reading group supervised by Prof. Paolo Cascini at Imperial College London. We are reading the paper *Anti-pluricanonical systems on Fano varieties* by Prof. Caucher Birkar.

  Algebraic Topology — *Aug. 2021 – Sept. 2021*
  - Co-organized a weekly reading group with 2 graduates at CUHK(SZ).
  - **Topics**: *Singular homology* (Jan. 2021), *Bott periodicity of spheres* and *higher homotopy groups*.

  Representation Theory — *May. 2020 – Jan. 2021*
  - Co-organized a weekly reading group supervised by Prof. Daniel Wong at CUHK(SZ).
  - **Topics**: *Lie algebras and matrix Lie groups*, *Classification of semisimple Lie algebras* and *representations of semisimple Lie algebras*.
- **Summer Programme at Girton College, Cambridge**
  Engineering Summer Programme — *July. 2019 – Aug. 2019*
  - **Courses**: *Renewable Energy*, *The Jet Engine*, *Nanotechnology*, *Quantum Technologies*.

Other Personal Interests Related to Mathematics

- **Physics and Mathematical Physics**
  Applying my Math knowledge to Theoretical Physics
  - I learnt Quantum Mechanics and Hamiltonian Mechanics in the Summer of 2021. My knowledge in representation theory and elementary symplectic geometry were useful.