

**EDUCATION**

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- **Imperial College London** London, UK  
*Master of Science in Pure Mathematics (in progress).* *Oct. 2021 – Oct. 2022*
  - **MSc Thesis:** Topic: Toric Varieties, Supervisor: Dr. Jonathan Lai.
  - **Autumn Semester Courses:** *Algebraic Curves, Manifolds, Commutative Algebra, Group Representation Theory*
- **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**
  - **Awards:** AY2019-20/2020-21 Dean's List Award of School of Science and Engineering.
  - **Courses:** *Differential Geometry, Introduction to Geometry and Topology, Advanced Linear Algebra, Abstract Algebra, Complex Variables, Real Analysis, Partial Differential Equations, Probability Theory*
  - **Grade:** Cumulative GPA 3.495/4.000, major GPA 3.794/4.000.
- **University of California, Berkeley** Berkeley, CA, US  
*Summer Session Visiting Student* *Jun. 2018 – Aug. 2018*
  - **Courses:** *Abstract Algebra and Research & Data Analysis*

**ACADEMIC ACTIVITIES**

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- **MSc Project** *Nov. 2021 – Sept. 2022*  
*Toric Varieties*
  - Writing a thesis on toric varieties under the supervision of Dr. Lai.
- **Study Group** *Aug. 2021 – Oct. 2021*  
*Algebraic Topology*
  - Co-organized on a weekly reading group with 2 students in CUHK(SZ).
  - **Topics:** *Singular homology theory (Jan. 2021 – Feb. 2021), complex K-theory and Bott periodicity of suspension and Weak homotopy equivalence and CW approximation*
- **Representation Theory** *May. 2020 – Jan. 2021*
  - Co-organized on a weekly reading group supervised by Prof. Daniel Wong in CUHK(SZ).
  - **Topics:** *Lie algebras and simply connected Lie groups, Classification of complex semisimple Lie algebras and Irreducible representations as quotients of verma modules*
- **Summer Programme at Girton College, Cambridge** *July. 2019 – Aug. 2019*  
*Engineering Summer Programme*
  - **Courses:** *Renewable Energy, The Jet Engine, Nanotechnology, Quantum Technologies.*

**OTHER PERSONAL INTERESTS RELATED TO MATHEMATICS**

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- **Computer Science and Formal Mathematics**  
*Trying to use simpler and stricter ways to define and use mathematical concepts.*
  - Implementing a run-able “math-rust” repository in github as “GiacomoZheng”. I wrote “Young Tableaux” in 2020 and I am writing the code of “Toric Varieties” now.
  - Implementing a new programming language “gm” in order to write the mathematics I am learning in a both machine-recognitiable and human-friendly way.
- **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.