CHENYANG ZHAO

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EDUCATION

Imperial College London October 2022 - Present
BSc in Mathematics *London, United Kingdom*

· Notable first year modules include:
Linear Algebra and Groups, Calculus and Applications, Analysis, Introduction to Applied Mathematics, Individual Research Project, Introduction to Computation.

North America International School (Shanghai) September 2020 - June 2022
A-levels *Shanghai, China*

· Mathematics, Further Mathematics and Physics: 3A*. Science society (President).

PROJECTS

Undergraduate Research Opportunity Programme(UROP) June-September 2024
Algebraic Geometry and Cryptography (Supervisor: Dr Soheyla Feyzbakhsh) *Imperial College London*

· Intensive literature reading on Elliptic Curve Cryptography.
· Studied about the related mathematics behind ECC. Presented the proofs on the properties of the constructed elliptic curve group on finite field (discrete).
· Realised some classic algorithms of ECC including Elliptic Curve Digital Signature Algorithm and the verification algorithm, and also the attacking algorithms including the Pollard's rho algorithm.

Second Year Group Research Project May-June 2024
Dynamics on Homogeneous Spaces: Ratner's Theorems and Applications *Imperial College London*

· Presented the proof from Ratner's Measure Classification Theorem to Equidistribution Theorem. Applied Homogeneous Dynamics in Number Theory. Proved Margulis' Theorem and visualised its quantitative version through code. `https://github.com/chenyangzhaoicl/ICL-M2R-Visualisation`
· Wrote Sections 5, 7, and Appendices B and D of the paper. Created several visualisations using Python to illustrate the ergodic flow on a torus and the quantitative version of Margulis' Theorem.

First Year Individual Research Project May-June 2023
Phase transition in one and two dimension Ising model *Imperial College London*

· Performed a poster presentation about: Introduce the basic Knowledge about Ising Model and the related maths knowledge. Explain the reason why there is no phase transition in 1-D Ising Model in a mathematical way. Explain the reason why there is a phase transition in 2-D Ising Model in a mathematical way.

TECHNICAL SKILLS

Technical Skills	Python, R, Latex, Git, Github
Software	Microsoft Excel & Powerpoint, Wolfram Mathematica, VScode, Citespace
Mathematics	Algebra, Geometry, Dynamical System, Number Theory

INTERESTS

Cryptography Cyber Security Languages AI Machine Learning
Travel & Photography: Solo backpacked 40+ countries.