

# Gian Cordana Sanjaya

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## RESEARCH INTERESTS

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Arithmetic statistics, algebraic number theory, analytic number theory.

## EDUCATION

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### University of Waterloo

Doctor of Philosophy

Major in Pure Mathematics

September 2023 - present

Advisor: Xiaoheng (Jerry) Wang

Expected graduation year: 2027

### University of Waterloo

Masters of Mathematics

Research Paper: Density of Special Classes of Polynomials with Squarefree Discriminant

Major in Pure Mathematics

September 2022 - August 2023

Advisor: Xiaoheng (Jerry) Wang

### University of Waterloo

Bachelor of Mathematics (Computer Science)

Major in Pure Mathematics and Computer Science

September 2018 - June 2022

## PUBLICATIONS

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4. M. Afifurrahman, V. Iverson, and **G. C. Sanjaya**, Multiplicatively dependent integer vectors on a hyperplane, <https://arxiv.org/abs/2510.10855>.
3. **G. C. Sanjaya**, Density of Special Classes of Polynomials with Squarefree Discriminant, <https://arxiv.org/abs/2505.06820>.
2. V. Iverson, **G. C. Sanjaya**, and X. Wang, Squarefree discriminants of polynomials with prime coefficients, <https://arxiv.org/abs/2501.09697>.
1. **G. C. Sanjaya** and X. Wang, On the squarefree values of  $a^4 + b^3$ . *Math. Ann.* **386** (2023), 1237–1265.

## TALKS

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4. Squarefree density of discriminant of polynomials with restricted coefficients  
Number Theory by Early Career Researchers Session, CMS Winter Meeting December 2025
3. Density of Special Classes of Polynomials with Squarefree Discriminant  
Student Number Theory Seminar, University of Waterloo June 2025
2. Squarefree discriminant of polynomials with prime coefficients  
Student Number Theory Seminar, University of Waterloo February 2025
1. On the squarefree values of  $a^4 + b^3$   
Number Theory Seminar, University of Waterloo October 2022

## SELECTED AWARDS AND SCHOLARSHIPS

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4. Pure Math Graduate Award from University of Waterloo, 2022-present.
3. Michael and Ophelia Lazaridis Olympiad Scholarship from University of Waterloo, 2018-2022.

2. William Lowell Putnam Mathematical Competition: **Honorable Mention** in 2018, 2019, and 2021.
1. International Mathematical Olympiad (IMO): Indonesian team, **Gold Medal** and **Top 10 team** in 2018, **Silver Medal** in 2017, **Bronze Medal** in 2016.

## TEACHING EXPERIENCES

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### TAs at University of Waterloo

- CS 145: Designing Functional Programs (Advanced Version) (Fall 2019)
- MATH 115: Linear Algebra for Engineering (Fall 2022)
- MATH 119: Calculus 2 for Engineering (Spring 2023)
- MATH 135: Algebra for Honours Mathematics (Fall 2022)
- MATH 136: Linear Algebra 2 for Honours Mathematics (Winter 2023, Winter 2024, Winter 2025)
- MATH 145: Algebra (Advanced Level) (Fall 2020, Fall 2023, Fall 2024)
- MATH 235: Linear Algebra 2 for Honours Mathematics (Fall 2025)
- PMATH 340: Elementary Number Theory (Spring 2023)
- PMATH 347: Groups and Rings (Spring 2025)
- PMATH 348: Fields and Galois Theory (Winter 2024, Winter 2025)
- PMATH 440: Analytic Number Theory (Fall 2025)
- PMATH 446: Introduction to Commutative Algebra (Fall 2023)
- Tutorial Centre (Winter 2023)
- Putnam Training (Fall 2024)

## OTHER WORKS

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5. Blog writer for [morfiD](#) 2024-present  
An Indonesian mathematical blog that presents undergraduate mathematics material. In charge for: complex analysis, field theory & Galois theory.
4. Assistant for the Indonesian IMO training camp 2020, 2024-present  
Lecturer for several sessions and grader.
3. [IMOSLLean4](#) 2023-present  
Formalization of IMO Shortlist problems in Lean4, starting from 2006. Covers every subject except geometry. Also includes generalization of some of the problems.
2. Problem proposer for the Indonesian National Mathematical Olympiad 2020-present
1. Problem curator and quality control for Kontes Terbuka Olimpiade Matematika 2019-2021  
An Indonesian mathematical olympiad community that organizes monthly mathematical contests at the national level.