

Justin Matthew Wong

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Skills

Languages & Technologies: C, C++, Python, Java, HTML, CSS, JavaScript

Platforms: Windows, Linux (Ubuntu)

Proficiency in algorithms and data structures.

Education

BS **University of Toronto**, Computer Science Sept 2023 – Present

- Cumulative GPA: 3.98/4.0
- **Coursework:** Software Development and Programming, Algorithm and Theory, Computer Architecture

Honors & Awards

2024 ICPC North America Championship, 13th Place

- Advanced to the ICPC World Finals Baku in September 2025

2023 Canadian Computing Olympiad, Bronze Medal

- Invited to the University of Waterloo as one of the top 30 high school contestants nationwide.

Extracurricular Activities

University of Toronto ICPC Team Sept 2023 – Present
Department of Computer Science, University of Toronto

Projects

Multi-Parameter Wireless Network Optimization Based on Coverage Simulation

2024 IMC Challenge powered by Huawei

- Utilized Python to optimize wireless network coverage through computational methods
- Developed a hybrid approach integrating genetic algorithm and hill climbing to navigate non-convex objective functions efficiently
- Explored further optimizations, including dimension reduction techniques like PCA and surrogate modeling with RBF Networks to enhance the efficiency of the optimization process

Pseudo-polynomial Algorithms for Length-bounded Integral Multicommodity Flow

S.T. Yau High School Science Award

[Final Paper](#) 

- Investigated and developed solutions for the length-bounded integral multicommodity flow problem.
- Proved that the general problem is NP-hard by using a reduction from 3SAT
- For series-parallel graphs, designed a pseudo-polynomial dynamic programming solution based on decomposition graphs, providing exact results and proving its optimality
- Implemented heuristic algorithms in C++, including simulated annealing, achieving over 80% accuracy based on empirical results