

LOW YU XUAN

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EDUCATION

National University of Singapore

2023 - Dec 2026

Bachelor of Science in Mathematics, Second Major in Computer Science

Current CAP / GPA: 4.67 / 5.00 (Highest Honors / Distinction)

Hwa Chong Junior College/High School

2015 - 2021

Cambridge GSE A-levels grade: AAA/AA

COURSEWORK

Computing

Artificial Intelligence, Object Oriented Programming, Data Structures and Algorithms, Computer Organization, Computer Networking, Information Security

Teaching Assistant: CS2030 Programming Methodology II

Languages: Python, Java, SQL, Sagemath, C, MIPS Assembly

Mathematics

Linear Algebra, Multivariate Calculus, Mathematical Analysis(S), Probability, Convex Optimization, Abstract Algebra(S), Game Theory

(S) denotes Special courses under the Special Programme in Mathematics

INTERNSHIP/WORK EXPERIENCES

Agency for Science, Technology and Research (A*STAR)

May 2025 - Aug 2025

Awarded A-Star's research award (ARIA) under the Institute of High Performance Computing. Project title: Quantum optimization for shortest vector problem used in lattice-based cryptography.

Government Technology Agency (GovTech)

May 2024 - Aug 2024

Integration of post-quantum cryptographic algorithms into software that are to be strong against quantum computing attacks. Presented different forms of hybrid cryptography to important stakeholders within the government.

Defense Science Organization

Feb 2023 - May 2023

Identified and attacked weak parameters in public key infrastructure using lattice-based algorithms. Simulated the 2017 ROCA attacks on weakly generated prime numbers used in RSA cryptography, using different variants of LLL/BKZ algos to benchmark run time.

ACADEMIC ACCOLADES

Singapore Math Olympiad(SMO)

3 time Singapore Math Olympiad Individual Gold medalist

Invited to SIMO Team - training team to qualify for national training team for the IMO

DSTA BrainHack AI Competition

2nd Runner-up in Advanced Category. Used ASR, NLP, VLM techniques to aid robots recognise vocal commands to fire accurately at targets.

Simon Maraias Mathematics Competition

Prestigious Asia-Pacific undergraduate Mathematical Olympiad similar to the Putnam competition for pure mathematics. - Attained rank 115

Citadel Terminal (AI competition)

Achieved rank 14 in the competition. Developed a model to compete in a AI based tower-defense game.

CO-CURRICULAR ACTIVITIES

Varsity Athlete (Track and Field)

NUS Varsity athlete and Team Captain of Track and Field (Sprints) at Hwa Chong Institution. - Awarded the Zi Qiang Bu Xi award for demonstrating excellent character and resilience.