Zackaryaa Ishraq

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EDUCATION

University of Warwick — **Coventry, United Kingdom**
Discrete Mathematics, Master of Engineering (MEng) — *September 2026 – June 2030*

Dame Alice Owen's School — **Hertfordshire, United Kingdom**
A Levels and GCSEs — *Graduated July 2026*

- **A Levels:** Further Maths A* (96%), Maths A* (94%), EPQ A* (92%, on Shor's algorithm), French A, Computer Science A; GCSEs: 9999999987
- **Other:** Harvard / edX Probability from the Ground Up (2023)

PROJECTS

Courier Dispatch Simulator — **November 2026**
Python simulation study • *github.com/zackaryaa-i/courier-dispatch-sim*

- Cut average peak delivery time by about a third versus oldest-first dispatch on Dubai Marina's real street network, by simulating 4 dispatch strategies (including Hungarian optimal matching and batching) over 100 paired random seeds with 95% confidence intervals.
- Traced ~93% of that gain to one simple nearest-order rule using a control strategy, and showed it costs the unluckiest customer ~24 extra minutes; replicated on Istanbul Kadıköy, with 21 automated tests.

Grokking in a Small Transformer — **November 2026**
Machine learning experiment • *github.com/zackaryaa-i/grokking-modular-arithmetic*

- Reproduced grokking in a single-seed run of a one-layer transformer (~224k parameters) trained on 30% of modular addition and subtraction pairs mod 97: test accuracy jumped from ~29% to over 99% between steps 6,000 and 7,800.
- Showed weight decay was the deciding factor (100% vs ~8% test accuracy after 30,000 steps), and predicted an 85% training-accuracy ceiling for order-blind subtraction that the model hit at 85.3%.

QuantDrill and UMT — **2026 – Present**
Founder and developer, live websites

- Built and launched QuantDrill, a timed mental-arithmetic trainer for quant and trading applicants with streaks and score-history graphs; live with real users.
- Founded UMT, a free revision site for university modules with practice questions and mark schemes for every topic, set up to rank in search; live with real students.

Freelance Web Development — **2026 – Present**
Websites for small businesses and community organisations

- Delivered a live lead-generation website for Card Machine Pro, a UK Dojo card-machine partner, with step-by-step enquiry forms and consent-based cookie analytics that log time spent on each page to Google Sheets via Apps Script.
- Currently rebuilding the website of a local mosque.

TechMentor National Hackathon Final — **August 2026**
2nd place nationally

- Placed 2nd nationally by designing the scoring and ranking logic for an AI tool rating tech firms' supply-chain sustainability (UN SDG 12), and leading the pitch.

WORK EXPERIENCE

BP — **London, United Kingdom**
Summer Intern, Canary Wharf — *June 2024 – July 2024*

- One of 5 interns selected across Trading & Shipping, Risk and Data Analytics.
- Built a three-stage supply-elasticity model for a commercial case study from real supply and demand data, and pitched the findings to BP industry professionals.
- Produced credit-risk ratings for major airlines from real-time market data.

National Grid — **Kent, United Kingdom**
Immersion, Isle of Grain terminal — *2023*

- Joined control-room staff in product testing; trained in identifying and mitigating risk on a hazardous site.

Private Maths Tutor — **Online, United Kingdom**
Self-employed — *June 2026 – Present*

- Tutor GCSE Maths one-to-one online, tailoring each lesson to the student's gaps; previously tutored Key Stage 2 and 3 maths.

Dame Alice Owen's School **Hertfordshire, United Kingdom**
Peer Mentor *September 2024 – July 2026*

- Ran weekly Year 8 maths sessions (2 to 1) and one-to-one French mentoring.

ACHIEVEMENTS

- **Programming:** Distinction, Oxford University Computing Challenge • Gold, UK Bebras Coding Challenge • Gold, Perse Coding Team Challenge (all in Python)
- **Maths:** 1st, University of Manchester MathsBombe • 2nd in the UK, AMSP Maths Feast (one of 4 chosen to represent my school) • 15th globally, TrinMac • Gold, UKMT Senior Maths Challenge
- **Writing:** International shortlist, Oxford Scholastica Essay Competition 2025 (maths) • 2nd nationally, Rotary Young Writer
- **School:** Outstanding Achievement awards in Computer Science (one per year) and Languages (one across 3 year groups)
- **Sport:** South East England Regional Powerlifting Champion (2025) • 7th, British Classic Bench (2026) • 4th, London Divisional Arm Wrestling (2026)

LEADERSHIP & COMMUNITY

- **Warwick:** Elected to the Warwick Students' Union Steering Group with the most votes of any candidate, across all roles, in the university-wide elections • Co-Chair of the Computer Science Student-Staff Liaison Committee, covering every year and course in the department • Warwick dodgeball team (BUCS) • WESOC
- **Bounds Green Food Bank (2020 – Present):** Helped set up the food bank, now serving 1,000+ people a week; coordinated 12 pallets of UN food rations to charities across London, building a spreadsheet system to verify and track collections.
- **Homeless Outreach (2018 – 2023):** Cooked and served hot meals every Saturday in Holborn for 60–110 homeless people.
- **School:** Elected Eco Committee rep: regional debates and organised solar panels for the main school building • Duke of Edinburgh Silver, Gold in progress

ADDITIONAL

- **Languages:** English (native), French (professional working proficiency), Arabic (intermediate), Spanish (conversational)
- **Technical:** Python (competition level), Java, SQL, C++; NumPy, SciPy, NetworkX, OSMnx, Matplotlib, pytest; Git & GitHub; HTML, CSS, JavaScript, Google Apps Script
- **Interests:** Powerlifting, arm wrestling (4th in London), dodgeball (Warwick, BUCS), table tennis, calisthenics, chess, piano