

# Malek Hammoud

📍 London, ON, Canada

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Grade 12 student with software and hardware development experience and a proven track record in competitive innovation. Led technical teams consulting for Fortune 500 companies (Microsoft, IKEA), won national hackathons, and earned a Canada Wide Science Fair Bronze Medal. Passionate about applying AI and robotics to solve real-world problems.

## EDUCATION

- **London Central Secondary School** London, ON, Canada
  - *Ontario Secondary School Diploma – Grade 12* Sep 2022 – Jun 2026
- **Western University** London, ON, Canada
  - *Scholarly Excellence Program (WISE) – Data Science & Computer Science* Sep 2025 – Apr 2026

## PROFESSIONAL EXPERIENCE & CONSULTING

- **Playtoon It, Inc.** Remote
  - *Full-Stack Developer Intern* Mar 2025 – Aug 2025
    - Collaborated with 15-member team building web platform; engineered loading screen with cross-fade transitions, integrated upload flows with backend APIs, and implemented profanity filtering
- **Microsoft Sustainability Challenge** Via The Knowledge Society
  - *Technical Lead – Finalist, Top 5 out of 172 teams* Mar 2025
    - Led technical research and implementation for biomimicry-inspired passive cooling system for data centers, potentially saving 100M+ liters of water annually; presented solution to Microsoft executives
- **SIMAD Foundation** Remote
  - *Senior Full-Stack Developer & Executive* Oct 2024 – May 2025
    - Built and optimized web platforms supporting foundation's community development mission
- **NatureTote, Junior Achievement Company** London, ON, Canada
  - *Vice President of Finance* Nov 2024 – Apr 2025
    - Oversaw financial strategy for student-run enterprise; negotiated with suppliers to secure quality standards
- **Bryck Technologies** Remote
  - *Software Developer Intern* Sep 2024 – Jan 2025
    - Delivered a scalable full-stack application that integrated into company's internal operations
- **Ikea Customer Experience Challenge** Via The Knowledge Society
  - *Technical Lead – Semi-Finalist, Top 19 out of 172 teams* Dec 2024
    - Led technical analysis of IKEA's recommendation algorithms, identifying improvements using CNN and reinforcement learning; presented comprehensive findings to IKEA executives
- **The Knowledge Society (TKS)** Remote
  - *TKS Innovator* Sep 2024 – Jun 2025
    - Selected for highly competitive 10-month accelerator, solving global challenges with emerging technologies

## RESEARCH & TECHNICAL PROJECTS

- **Autonomous Litter Detection & Mapping** Independent Research
  - *Sole Developer* Sep 2024 – Mar 2025
    - Built drone-based system using YOLOv5 computer vision and GPS mapping; trained model on 772 images
    - Mapped precise litter location on a 5000m<sup>2</sup> area in under 10 minutes during test flights.
    - **TVSEF 2025 (Science Fair):** Gold Medal, OES Inc. Excellence Award
- **GreenGuardian: Automated Weed Detection & Elimination** Independent Research
  - *Sole Developer* Nov 2023 – May 2024
    - Designed autonomous robot using computer vision for precise weed detection and targeted herbicide application
    - Integrated camera-based CV with microcomputer processing; 3D-printed chassis and programmed control systems
    - **Canada Wide Science Fair 2024:** Bronze Medal
    - **TVSEF 2024:** Gold Medal, Western Research Imagination Prize
- **Maze-Solving Robot Car** Independent Research
  - *Sole Developer* Oct 2022 – Mar 2023
    - Built my first autonomous robot using infrared sensors
    - **TVSEF 2023:** Silver Medal, Engineers Choice Award, Western Engineering Summer Academy Award

## HACKATHONS

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- **Hack the North 2025** Waterloo, ON  
*Top 32 Finalist out of 250+ projects* Sep 2025
  - Built "Monkey See Monkey Do": AI-powered 6DOF robot learning physical skills from text descriptions; designed custom robot and programmed ESP32 microcontroller
- **Hack the 6ix 2025** Toronto, ON  
*Winner – Deloitte's "Best Use of AI for Green"* July 2025
  - Developed FridgeMind: AI retrofit for refrigerators tracking groceries and reducing food waste; configured QNX on Raspberry Pi, trained custom YOLOv5 model, integrated Google Gemini and AssemblyAI
  - Now evolving into a startup — Basil Home AI (*basilhome.ca*) — leading all technical development
- **Solution Hacks 2025** Toronto, ON  
*Participant* July 2025
  - Built EcoSphere: environmental monitoring SaaS supporting UN SDGs with Forest Cover Monitor, Biodiversity Tracker, and Climate Alerts
- **TKS Global Hackathon 2024** Remote  
*Top 4 Winner out of 200+ projects* Dec 2024
  - Developed PosturePal: hardware device providing real-time posture feedback using sensors and automated spray mechanism

## LEADERSHIP & COMMUNITY INVOLVEMENT

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- **Programming Club** London Central SS  
*Co-President* Sep 2023 – Present
  - Teach coding fundamentals; prepare students for the CCC; host competitions; facilitate projects.
  - Creating a place where every student could see themselves as capable.
- **STEM Club** London Central SS  
*President* Sep 2024 – Present
  - Lead weekly meetings preparing students for science fairs; organize STEM presentations
- **Math Enrichment Club** London Central SS  
*Co-President* Sep 2023 – Present
  - Prepare students for CEMC competitions; lead presentations on advanced topics like Game Theory and 4th Dimensions; host Fun math related game days and competitions
- **Uni'd NGO** Remote  
*Technology Manager* Nov 2024 – Jun 2025
  - Built and managed the organization's official website — [unid-admissions.org](http://unid-admissions.org)
- **London Public Library** London, ON  
*Volunteer Technology Tutor* Mar 2023 – Aug 2023
  - Helped adults and seniors navigate computers, smartphones, and the internet

## HONORS & AWARDS

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- **Academic & Computing:**
  - AP Computer Science A (2025) – Highest Score (5/5)
  - Canadian Computing Competition (2024) – Senior Distinction
  - Canadian Computing Competition (2023) – Junior Honors
  - London Central Secondary School Award of Excellence (2023, 2024, 2025) – 90%+ Average
  - Masonville Public School Science Award (2022) – Top in the Graduating Class
- **Science Fairs:**
  - Canada Wide Science Fair (2024) – Bronze Medal
  - Thames Valley Science Fair (2025) – Gold Medal, OES Inc. Excellence Award
  - Thames Valley Science Fair (2024) – Gold Medal, Western Research Imagination Prize
  - Thames Valley Science Fair (2023) – Silver Medal, Engineers Choice Award, Western Engineering Summer Academy Award
- **Hackathons:**
  - Hack the North (2025) – Top 32 Finalist out of 250+ projects
  - Hack the 6ix (2025) – Winner, Deloitte's "Best Use of AI for Green"
  - TKS Global Hackathon (2024) – Top 4 Winner out of 200+ projects
- **Consulting Competitions:**
  - Microsoft Sustainability Challenge (2025) – Finalist, Top 5 out of 172 teams
  - IKEA Customer Experience Challenge (2024) – Semi-Finalist, Top 19 out of 172 teams