Malek Hammoud

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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 – 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 annotated images
- Mapped precise litter location on a 5000m² area in under 10 minutes during test flights.
- **TVSEF 2025:** 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 first autonomous robot using infrared sensors — **TVSEF 2023:** Silver Medal, Engineers Choice Award, Western Engineering Summer Academy Award

Hackathons

- **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

- **Programming Club** — London Central SS
  Co-President — *Sep 2023 – Present*
  - Teach coding fundamentals; prepare students for the CCC; host competitions/Hackathons; 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** — Remote
  Technology Manager — *Nov 2024 – Jun 2025*
  - Built and managed the organization's official website — 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

- **Hack the North (2025):** Top 32 Finalist out of 250+ projects
- **Hack the 6ix (2025):** Winner – Deloitte's "Best Use of AI for Green"
- **Microsoft Sustainability Challenge (2025):** Top 5 out of 172 teams
- **Thames Valley Science Fair:** 3× Gold Medal (2023–2025); OES-INC Excellence Award (2025); Western Research Imagination Prize (2024); Engineers Choice & Western Summer Academy Awards (2023)
- **AP Computer Science A (2025):** Highest Score (5/5)
- **IKEA AI Challenge (2024):** Semi-Finalist, Top 19 out of 172 teams
- **TKS Global Hackathon (2024):** Winner
- **Canada Wide Science Fair (2024):** Bronze Medal
- **Canadian Computing Competition:** Senior Distinction (2024), Junior Honors (2023)
- **London Central Secondary School Award of Excellence (2023):** 90%+ Average