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 – 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 5000m² 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

- **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; 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
- **London Public Library** — London, ON
  - *Volunteer Technology Tutor* — *Mar 2023 – Aug 2023*
    - Helped adults and seniors navigate computers, smartphones, and the internet

HONORS & AWARDS

- **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
- **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) – Top 5 out of 172 teams
  - IKEA Customer Experience Challenge (2024) – Semi-Finalist, Top 19 out of 172 teams