Mazen Alhassan

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EDUCATION

Carleton University, B.I.T in Information Technology, GPA: 3.8 / 4.0   Expected Graduation: April *2027*
Relevant Coursework: Data Structures & Algorithms, Advanced Network Routing, Network Security, Network Management & ML

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, TypeScript, SQL, PowerShell, HTML/CSS, C, C++, PHP, Bash, MATLAB
Frameworks & Tools: React.js, Next.js, Flask, Django, XCode, Express.js, Cypress, Pandas, Kubernetes, Jenkins, Git, Azure
Interests: Artificial Intelligence, Generative AI, Large Language Models, Prompt Engineering

WORK EXPERIENCES

Université Laval   **Quebec City, QC**
Research Intern | NetworkX, Matplotlib, Database modeling, MITRE ATT&CK framework   *Jun 2025 – Oct 2025*
- Built a MITRE ATT&CK–driven attack-flow generator in Python (NetworkX, Matplotlib), modeling databases and web apps.
- Combined separate paths into one capability-tagged graph, making it easier to see how attackers could pivot mid-flow.
- Built a Python-based risk model using MITRE ATT&CK metadata to score nodes, rank critical attack paths, & guide remediation.
- Reviewed 25+ cybersecurity papers to find gaps in attack modeling, presenting to 5 researchers and contributing to 2 public drafts.

Locvm   **Ottawa, ON**
Full Stack Dev / QA Tester Intern | GitHub Actions, CI/CD pipelines, RESTful APIs, SQL   *Mar 2025 – May 2025*
- Delivered 95% regression prevention and zero production bugs by designing 50+ automated test cases in a Next.js framework.
- Cut QA overhead 60% and sped deployments from 2 weeks to 3 days by writing 20+ tests / automating CI with GitHub Actions.
- Improved system reliability 40% and cut detection time from 4h to 30m by resolving 15+ issues and adding testing/monitoring.
- Enhanced API performance optimizing SQL queries / refining RESTful endpoints, reducing average response time from 500ms to 350ms.

Carleton University   **Ottawa, ON**
IT Support Consultant | TeamViewer, Microsoft Remote Desktop, BitLocker, FileVault, Active Directory   *Sept 2024 – Apr 2025*
- Resolved 150+ hardware/software tickets for faculty, staff, and students across Windows 10/11 and macOS using remote tools.
- Performed account administration (on/off-boarding, group membership, password resets) and wrote user-facing how-tos.
- Set up and relocated computer equipment for classrooms and offices, ensuring smooth transitions with minimal downtime.

PROJECTS

KeyStudy – EdTech Platform | React, Typescript, Supabase, Stripe, n8n   *Aug 2025 – Present*
- Built pay-per-document platform enabling students to unlock CourseHero materials without monthly subscriptions, serving 400+ users across 6 countries resulting in $9,060 in student savings.
- Delivered documents within 2 minutes of payment as measured by a 99.8% success rate and user satisfaction by reliably maintaining automated n8n workflows with email notifications, payment verification, and error handling.
- Generated organic user growth with zero marketing spend as measured by 400+ signups and 2+ weekly conversions by implementing SEO optimization, magic link authentication (Supabase Auth), and frictionless checkout flow.

MITRE ATT&CK Flow Generator | Python, NetworkX, Matplotlib, PowerShell, Microsoft Sentinel   Jun 2025 – Oct 2025
- Developed a Python-based MITRE ATT&CK flow generator encompassing 150+ techniques across 4 major security domains.
- Engineered 25+ attack paths with comprehensive modular architecture supporting database and web application threats.
- Automated professional-grade security documentation as measured by 300 DPI visualizations and machine-readable JSON exports by creating interactive CLI with customizable layouts, color-coded attack flows, and MITRE technique ID mappings.

Implementation of SOC and Honeynet In Azure | Microsoft Azure, Microsoft Sentinel, PowerShell, SIEM   *July 2025*
- Deployed a threat detection system with automated RDP alerts via Microsoft Sentinel, custom workbooks, and a live dashboard.
- Built enterprise security operations with real-time telemetry from 50+ sites using Azure Log Analytics and custom queries.
- Improved system reliability 40% by resolving 15+ issues, adding monitoring, cutting detection time from 4 hours to 30 minutes.

Certifications

CCNA: Enterprise Networking, Security, and Automation | Cisco   Oct 2025
Introduction to Cybersecurity | Cisco   Sep 2025