Allan He-Chen

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EDUCATION

Toronto Metropolitan University   Sep. 2021 – May 2026
Bachelor of Science in Computer Science, Co-op   *Toronto, ON*

- **GPA:** 4.26/4.33 (3.97/4.00)
- **Relevant Courses:** Database Systems, Computer Networks, Operating Systems, Artificial Intelligence, Data Structures, Algorithms, Web Systems Development, Intro to Software Engineering
- **First-Year Computer Science Award:** Highest grade in first-year Computer Science courses

EXPERIENCE

Supply Chain Data Analyst   May 2023 – Dec. 2023
Ontario Power Generation   *Pickering, ON*

- Received a work-term evaluation with a score of 99/100
- Created a custom tool using Python libraries including pandas, NumPy, and pyodbc revolving around specialized SQL queries for team use based on supervisor specifications and database documentation, automating a manual process from one-by-one entry to processing thousands of entries simultaneously
- Led a data cleanup initiative, identifying over 3,700 database errors caused by a previous bug, correcting 2,800 still-relevant ones by collaborating with vendors and leveraging internal data
- Streamlined weekly tasks by analyzing workflows and automating repetitive actions in Python, Excel, and Access, saving in excess of 3 hours of manual work for my team each week

PROJECTS

MovieMatrix | *React, Express, Oracle SQL, REST API Query, Docker*   Sep. 2024 – Present

- Led a team of three in developing a full-stack web application, utilizing Express.js to serve a REST API for a React front-end, ensuring effective collaboration and adherence to project timelines
- Modeled and normalized a database schema to efficiently pull and manage data from TMDB's REST API for integration into the application
- Implemented robust user authentication and authorization mechanisms utilizing JWT to ensure secure access and maintain session integrity
- Guided team members in understanding the project rubric, delegating tasks based on individual strengths, and fostering an environment of open communication and collaboration

RP2040 Lightsaber | *CircuitPython, OrcaSlicer, Fusion360, Circuit Diagrams*   Aug. 2024 - Oct. 2024

- Leveraged CircuitPython to interface with a 6-axis gyroscope and accelerometer, enabling real-time control of NeoPixels and an I2S audio interface for lighting and sound effects on a Raspberry Pi Pico Microcontroller
- Designed and 3D printed components using parametric design in Fusion360, creating a detailed assembly to house components and withstand hits from other lightsabers
- Addressed challenges with motion detection accuracy by refining the sound algorithm using mathematical functions, resulting in a more realistic and responsive user experience

Linux Server Administration | *BASH Scripting, SMTP, Docker, Node.js*   May 2023 - Present

- Configured and administered Linux Server infrastructure including system configuration, backup management, and performance optimization, ensuring reliable and secure operations for critical applications
- Automated server monitoring and backup solutions, utilizing shell scripting and cron jobs to ensure data integrity, timely notifications, and system recovery in case of failures
- Utilized Docker to containerize web applications, enabling streamlined deployment, scalability, and easy management of dependencies, resulting in many applications hosted on the same system

TECHNICAL SKILLS

Languages: Python, Java, C, JavaScript, SQL, HTML/CSS, BASH Scripting
Libraries/Frameworks: React, Express.js, Node.js, pandas, NumPy, pyodbc
Developer Tools: Git, Docker, VS Code, ER Diagrams, UML
Other Tools: Microsoft Office, OrcaSlicer, Fusion 360, PowerBI