David Chen

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Technical Skills

Languages: Java, Python, C, C++, Golang, JavaScript, HTML, CSS, PostgreSQL, Lua, Nix, Powershell, Bash, x86 Assembly
Frameworks and Libraries: ReactJS, ExpressJS, NextJS, Flask, Streamlit, 3JS, pandas, Tensorflow, Beautifulsoup, NetworkX
Developer Tools: VMWare, Virtualbox, QEMU, Git, Docker, Linux, VS Code, Visual Studio, Vim, AWS
APIs: Win32API, GTK4

Education/Certifications

Honours Bachelor of Computer Science Candidate	Sep. 2024 – Jun 2029
University of Toronto	*Toronto, ON*
CompTIA A+	Aug 2024

Work Experience

Computer Science Instructor	Aug 2022 – Sep 2023
RoboEDU	*Toronto, ON*

- **Taught Python, C, Lua and Robotics:** With interactive exercises and tutorial work for 30+ students. Fostered a inquiry-first teaching methodology for software and hardware design.
- **Led a Junior Robotics Team:** Acting as a mentor during the engineering process. Established tests for consistency and stability aswell as routine code audits.
- **Developed Neural Networks and Computer Vision Projects:** Guiding 5 students through the process of developing with Tensorflow and Sklearn.

Automation Engineer Intern	Mar. 2023 – Jun 2023
Pathway Communications	*Toronto, ON*

- **Automated Routine Device Configuration Process:** By writing periodic python scripts utilizing subprocessing to emulate terminal input. Scripts check for expired certificates, old passwords and unused ports. Has been used to monitor and update 100+ local firewalls and routers.
- **Integrated Elastic EDR Into Company Ecosystem:** By using EC2 cloud servers with production-equivalent environments to test run its endpoint defense and analysis capabilities.

Extracurricular Roles

CTF Team Captain BLIGHT BABIES CTF | *Reverse Engineering, Web*   Dec 2023 - Present

- **Won 3rd Place at ISSessionsCTF 2025:** Clearing the programming category and 4 Web exploitation challenges.
- **Playing Bi-weekly:** With a running total of 14 CTF events attended.
- **Wrote a recon reference for reversing ELF binaries:** Assisting in the static analysis phase. Effective for solving 10 challenges thus far.
- **https://ctftime.org/team/280084**

Director of Technology CSEC - UofT | *ReactJS, LLVM*   Sep 2024 - Present

- **Directed Workshops in Frontend Development:** By explaining the underlying concepts of ReactJS's transpilation and rendering engine.
- **Leading Bytecode Interpreter Development:** For an upcoming CSEC seminar about a LLVM-made interpreter for esoteric language germspeak.

Web Scraper Lead C.R.E.A.T.E - UofT | *Python, Flask, Beautifulsoup*   Sep 2024 - Present

- **Created a News Crawler:** Periodically parses 5 news outlets. Done by establishing bi-weekly meetings for group members to work out project requirements.
- **Led Webscraper, PostgreSQL and AWS Tutorial sessions:** Teaching many novice programmers how to setup development environments and use cloud services by example.

Design Club Executive Design@Bethune | *Linux, 3D Design*   Sep 2023 - Jun 2023
- **Led 7+ Workshops:** On linux, game design, 3D printing, woodworking and graphic design.
- **Established Partnerships Between Art Club:** Allowing for our collaborative sticker printing and graphic design workshops.
- **Managed Club Administration:** By developing budgets and recording existing club resources for future workshops months in advance.

Projects

PhishNet.work | *AWS, ReactJS, NextJS, Twilio. SageMaker*   UoftHacks 12 2025
- **Built off Twilio API:** Making endpoints for outbound and inbound calls to be recieved and serialized for text interpreting.
- **Configured AWS Ecosystem:** With EC2 server setup, firewall rules and webhooks to connect Twilio and Sagemaker.
- **Setup Transcription to Scam Detection Pipeline:** By converting muVal audio data into text and then passing it into BERT classificaton for phishing weight.
- **https://dorahacks.io/buidl/21620**

Data Dam | *ReactJS, Flask, Google Maps, Open-Meteo, IWLS, Sklearn*   CTRL+HACK+DEL 2024
- **Data-mining of Historical Climate Data:** By curating and sanitizing 2 online datasets used for training in the forest classification ML model for stream intensity.
- **Integrated Location APIs:** With Google maps. Open-Meteo and IWLS APIs to measure local temperature, humidity and water-levels from a user's IP address.
- **https://devpost.com/software/data-dam**

Room.IT | *AWS, ReactJS, NextJS, NodeJS*   Hack The Student Life 2024
- **Deployed with AWS Amplify:** Used it to monitor API requests with AWS's API gateway.
- **Setup API Endpoints:** With NextJS to interface PrismaDB with custom defined CRUD operations.
- **https://devpost.com/software/room-it-zjpel6**

Scan2Donate | *React, Flask, OpenCV, YOLO, PSQL, Openstreetmaps*   Hack The Valley 2024
- **Trained an Object-Detection Neural Network:** Using YOLO for detecting 20+ food items.
- **Setup Backend APIs:** For IP to location-finding and interfaces for between Flask and ReactJS.
- **Designed Scalable PostgreSQL Schema:** With automatic API calls to maintain entries.
- **https://devpost.com/software/scanforgood**

EcoNom-y | *PostgreSQL, Streamlit, Flask, Gemini*   Terrahacks 2024
- **Created PostgreSQL Database:** With APIs for interface designed to query a large database of recipe data at low latency.
- **Developed APIs for Computer Vision and NLP resources:** Allowing for input results to be rendered naturally for the frontend application.
- **Workshopped and Designed the Front-End:** Created in streamlit with templates for displaying recipes.
- **https://devpost.com/software/econom-y**

Indigenous Archive | *Java, Jsoup, Processing*
- **Created a Fast Java Webscraper:** Which periodically parses Imgur and Pinterest for cultural art.
- **Integrated Internet Archive API:** For periodic archival of scraped images.
- **https://github.com/digitalyoshixi/indigenous-archive-test**

Winter Ocean | *Python, Pygame, Git*   Bearhacks 2020
- **Created a World Generation Algorithm:** Using random noise for replayability.
- **Applied Linear Algebra:** For manipulated input vectors to achieve natural and precise character movement.
- Final project was praised for being highly addictive.
- **https://replit.com/@DavidChen98/hackingthon-ioindian-ocean-game**