

## Tyson Line

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Portfolio: <https://tysonline.github.io/Portfolio/>

## Experience

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### Mobile App Designer

May 2024 - September 2024

*Practice Positivity | Cayman Islands*

- Initiated the design of the Practice Positivity mobile app by implementing **user-friendly interfaces** and a seamless UX.
- Developed detailed **functional** requirement documents by outlining app features, **user flows**, and technical specifications.
- Created **wireframes** and **prototypes** to visualize the app's design and functionality.
- Conducted comprehensive research on competitors to identify **market trends** and best practices.
- Explored and evaluated different **databases** and back-end technologies to recommend solutions for efficient data management and **scalability**.
- Provided strategic **insights** on utilizing social media platforms like TikTok and Instagram to promote the company and the app, enhancing **brand visibility** and user engagement.

### Ad Fraud Detection Intern

March 2023 - May 2023

*Brave Software | Remote*

- Reduced fraudulent activities on Brave by programming **innovative** countermeasures and thorough data analysis.
- Successfully researched and identified **automation scripts** and software taking advantage of the Brave ads reward system.
- Broke down, modified, and **improved** the scripts. Wrote a Python program to detect mouse movements and determine the likelihood of script usage for a new **fraud detection** program on the Brave Ads platform while considering human mouse interaction and mouse accessibility settings.

### Website Designer

May 2024 - September 2024

*Healthy Futures, Ltd. | Cayman Islands*

- Designed and built websites using **Wix** cloud-based development platform.
- Differentiated pages, creative and **graphic design**
- **Image editing** and text/image layout, with mobile formatted version.
- Developed customer response form with customized **data entry** fields and drop-down lists.
- Tested and **debugged** using select focus groups, integrated ideas from team members to make functional improvements ahead of launch.
- **Designed** company logo, business cards, and imagery for **marketing** materials for the website.

## Projects

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### 2025 SE Competition – Cybersecurity (OSINT)

1st Place – Round 1 (Hosted by Temple University)

- Secured first place in the Open-Source Intelligence (OSINT) round, demonstrating strong investigative and analytical skills.
- Successfully identified hidden flags across two provided websites by leveraging techniques such as examining HTML/CSS, discovering hidden links, and filtering out red herrings.
- Applied cybersecurity methodologies to extract and validate critical information while navigating misinformation traps.
- Showcased teamwork and adaptability in a time-sensitive, competitive environment.

### TysonChess Chess Engine

Developed a high-performance chess engine using Java that leverages advanced algorithms such as bitboard representations, magic bitboards, and Zobrist hashing for efficient move generation and board evaluation.

- Engineered an alpha-beta search algorithm with move ordering (MVV-LVA) and a transposition table, enabling deep search depths (10+ ply) while maintaining fast response times.
- Implemented comprehensive move generation—including special moves like castling, en passant, and pawn promotion—and integrated full UCI protocol support for seamless interaction with graphical chess GUIs and an interactive console UI for real-time play.

## **uOttHack 7 Hackathon**

Effectively worked within a 4-person team to design and develop a full-stack application inspired by Workday using JavaScript, TypeScript, React, Next.js, and Tailwind CSS.

- Implemented Groq AI and MongoDB Atlas for intelligent data processing and storage solutions.
- Engineered real-time database connectivity with dynamic update functionality.
- Integrated natural language processing and file upload capabilities to enhance user experience and streamline interactions.

## **Rentify Application**

Full Stack App Development with Android Studio

- Built a full-stack rental application using Android Studio, integrating Firebase for real-time database functionality and dynamic data retrieval.
- Collaborated effectively within a 4-person team to design and implement core features, ensuring seamless user interaction and robust performance.
- Designed and implemented user-friendly interfaces to simplify property leasing and rental management processes.

## **Therapy Robot**

Full Stack App Development

- Developed a Rogerian therapy robot using a LLM and a Raspberry Pi embedded in a stuffed animal to simulate empathetic conversations.
- Developed speech recognition and text-to-speech software to interact with users
- Leveraged natural language processing and Rogerian therapeutic techniques to provide empathetic responses

## **Education**

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**University of Ottawa, Ottawa, ON | 2023-Ongoing**

Enrolled in: Honours BA in Computer Science

## **Skills & Certifications**

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**Soft:** Accountable & Coachable, Proactive & Flexible, Effective communicator, Organization and Task prioritization

**Technical:**

- Microsoft Office Tools
- Python, Java, Javascript, React, Typescript, Kotlin Android Studio
- Adobe Premiere Pro, Photoshop, SolidWorks, CodeRunner, Visual Studio Code, Eclipse, Webstorm
- PC assembly and upgrades

## **Volunteer Work**

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### **STEM Camp Counsellor**

*University of Cayman Islands STEM camp*

03/23 – 05/24

- Improved the skills of 100+ students in Arduino Systems and C++ by developing engaging and insightful lesson plans.