Omar Elserwi

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TECHNICAL SKILLS

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, SQL, PHP, HTML, CSS, Bash, Kotlin
Frameworks/Libraries: React, Node.js, Express.js, Next.js, Bootstrap, Tailwind, Expo, jQuery
Tools & Technologies: Docker, Git, AWS, REST APIs, PostgreSQL, Linux, Grafana, Graylog, Postman, Selenium, Kubernetes, Jenkins

WORK EXPERIENCE

VR Developer - *Laurier Kinesiology & Phys-Ed Lab*   October 2022 - Present
- Designed and implemented immersive virtual reality (VR) simulations using **Unity** and **C#,** delivering precise control and heightened realism for research and training, while leveraging iterative design and user feedback to further refine interactive elements.
- Conducted comprehensive data analytics on VR-generated datasets using **Python** and **Pandas**, identifying key trends and insights to support research outcomes and improve simulation design.
- Developed and **optimized** interactive 3D environments with custom physics models, improving performance from 60 to 90+ FPS, significantly enhancing user engagement and real-world accuracy for training simulations and data collection.
- Collaborated with interdisciplinary teams of researchers and students to align **VR** projects with experimental goals, ensuring technical and functional requirements were met.

Software Developer - *LeapAP*   September 2024 – December 2024
- Reduced issue resolution time by over 40% via building an automated internal triaging tool using **Express.js** integrated with **MySQL**, and redesigning older interfaces to accelerate error detection, saving 2+ hours daily.
- Boosted data collection efficiency by 80% by developing and optimizing web scraping and parsing solutions using **Node.js**, **Puppeteer**, and **Bluebird**; automating invoice retrieval for 350+ users.
- Decreased onboarding time for new interns by 50% and streamlined orientation processes by leading training and mentorship programs along with providing structured guidance and proper documentation.
- Ensured optimal system performance via **Grafana** and **Graylog** monitoring, quickly addressing issues and minimizing downtime.
- Enhanced system performance by restructuring **SQL** queries and implementing caching, reducing runtime by 20 seconds and improving the overall efficiency of data-driven operations.

Full Stack Developer - *CondoWorks*   January 2024 – April 2024
- Maintained and expanded upon a **PHP** application, resolving 200+ tickets through the implementation of new features and resolution of bugs, all while upholding best practices in server security and ensuring seamless user experience.
- Effectively managed and optimized a **MySQL** database to streamline data storage, retrieval, and manipulation processes. The resulting improvement optimized both **web scraping** operations and application functionality.
- Collaborated closely with my team to implement automated testing and **continuous integration**, streamlining deployments, enhancing code quality, and reducing production bugs by 30%, ultimately improving system reliability.
- Refactored legacy code from 100+ scrapers, migrating them to a newer framework, converting them to **TypeScript**, and enforcing best coding practices, significantly reducing technical debt, improving performance, and streamlining future development.
- Reduced parsing costs by over 70% by standardizing invoice parsing workflows, replacing dependency on external tools like **Docparser**, and creating reusable **regex** patterns for 150+ invoice formats.

PROJECTS

Bookineer | SaaS   *Bookineer.com*
- Architected and developed a production-ready **SaaS** booking platform with **React**, **TS**, **Next.js**, and **PostgreSQL**, implementing industry best practices for code organization, testing, and security while maintaining 99.9% uptime for business clients
- Designed and implemented a scalable **microservices** architecture utilizing **Docker** containerization and **CI/CD** pipelines, reducing deployment time by 40% and enabling seamless feature additions without service interruption
- Built a secure authentication system using **JWT** tokens with role-based access controls, protecting sensitive business and customer data while facilitating different permission levels for administrators, business owners, and customers
- Engineered a comprehensive payment processing system integrating Clover and Stripe API with custom **webhook** handling, supporting multiple payment methods while ensuring **PCI** compliance and implementing error recovery for failed transactions

WatTravl | Kotlin   *Github Link*
- Led development of WatTravl, an Android-based campus navigation app serving University of Waterloo students, secured via an authentication system with UW email verification, implementing modern **UI/UX** design with interactive maps
- Developed scalable pathfinding algorithms in **Kotlin** with Google Maps integration for real-time seamless indoor-outdoor navigation.

EDUCATION

University of Waterloo   *Expected August 2025*
Bachelor of Computer Science, *with a specialization in Software Engineering* (BCS, co-op)

Wilfrid Laurier University   *Expected August 2025*
Bachelor of Business Administration, *with a concentration in Finance* (BBA, co-op)