Zuhab Wasim

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Technical Skills

Languages: Python, C#, JavaScript, SQL, Bash, Java, GDScript, PostgreSQL, (learning: C++, Rust)
Frameworks / Libraries: FastAPI, React, THREE.js, Open3D, NumPy, scikit-learn, Pydantic, asyncio, cProfile
Development: Microservices, Docker, Git, GitHub Actions, CI/CD, Linux, Postman, OpenAPI, JIRA, Confluence
Concepts: Performance Optimization, 3D Algorithms & Raycasting, Shaders (GLSL/WebGL), Design Patterns

Experience

3D Software Engineer Oct 2024 – Present
iCAD Dental

- Refactored a 10k+ lines legacy monolith into 10 Dockerized FastAPI microservices, slashing technical debt and enabling stateless deployment on AWS
- Introduced PEP 8 style guides and microservice structuring, authoring PR templates, Git-JIRA workflows, Confluence / Swagger docs, and personally presenting updates to C-level stakeholders
- Vectorized ray generation and removed costly tensor to NumPy conversions, yielding a 1000x increase in speed (0.5s to 0.0005s) and reducing runtime by 50%
- Reduced payload response size from 80 MB to 2 MB, leveraging MsgPack's binary serialization, zstd compression and clever JSON structuring
- Redesigned a mesh-alignment algorithm, cutting time from 5s to 1s using a deterministic convex-hull + DFS approach, yielding reliable and reproducible transforms

Software Developer May 2020 – Aug 2021
BiblioCommons

- Delivered SaaS integrations through modern web infrastructure for libraries globally, onboarding clients, testing, being on-call and troubleshooting process
- Decoupled direct client connection favouring faster AWS EC2 cloud solutions, syncing client databases on off-peak hours to halve page load times
- Undertook a database migration for a large client using Python, Java, and SQL to transfer 1 million records with no downtime or data loss, earning "star" employee accolades

Projects

3D Tooth Analytics Backend – iGDS | *Python, FastAPI, Open3D, NumPy, Blender* Oct 2024 – Mar 2025

- Engineered algorithms for over- / under-prepping analytics using KD-Trees, Opend3D raycasting to accelerate chairside dental procedures
- Designed abutment-angle algorithm for sidewall analysis with Savitzky–Golay smoothing and PCA/SVD regression, and GPU-accelerated algorithms
- Derived new "sidewall-base" 3D feature to leverage for sub-milimitre accuracy undercut algorithm

Visualizer Engine - Dental UI | *Three.js, WebGL, GLSL, React, MsgPack, Facade pattern* Jan 2025 – May 2025

- Modularized a Three.js visualizer into managers classes and exposed a facade API for easy UI integrations, dividing a monolithic 1000+ line file into <200 line / file production-ready architecture
- Built custom GLSL shaders for under/over preps using barycentrics, data textures, and a fresnel x-ray shader, 2x faster than the built-in alternative

Reflection - Game | *C#, Unity, Git* Jan 2022 – Apr 2022

- Led a 10-person cross-disciplinary to design a 30-minute narrative/puzzle campaign in 3 months
- Contributing >50% of C# backend, prioritizing game logic, becoming the course's most polished game, reaching 600+ views and 150+ downloads by game launch

Skinmergency - Hackathon | *Java, Android, Azure Custom Vision, TensorFlow* 2019

- Awarded "Best Healthcare App" identifying 10 different skin diseases with Azure AI image detection, accomplishing a 96% accuracy in discerning moles vs cancer

Education

University of Toronto Toronto, ON
Honours Bachelor of Science in Computer Science, Minor in Mathematics