

Patrick Tonderai Ganhiwa

Software Engineer



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Profile

I am a passionate and driven Software Engineer currently contributing to the Knowledge Translation Unit, where I work across the entire software development lifecycle from design to deployment. Backend-focused Full Stack Engineer with strong experience in Python-based API development and modern React applications. My role includes coding, code reviews, debugging, and integrating new systems to build seamless and efficient software solutions. My journey in computer science is fueled by a deep fascination with technology and problem-solving. I'm always eager to connect with like-minded professionals, exchange ideas, and explore innovative solutions in software development. Let's connect and push the boundaries of technology together.



Education

University of the Western Cape
Bachelor of Science in Computer Science

University of the Western Cape
BSc (Hons) in Computer Science



Work Experience

Software Engineer | Knowledge Translation Unit, August, 2024 – Present

- Develop and maintain healthcare-focused software applications used across clinics, hospitals, and research environments in resource-constrained settings.
- Translate complex clinical and public health requirements into scalable software solutions through close collaboration with clinicians, researchers, and domain specialists.
- Design and implement RESTful APIs and backend services using Python (FastAPI), .NET Core, and modern API design principles.
- Design and implement responsive front-end applications using React, Next.js 14, JavaScript, and TypeScript, delivering intuitive user experiences for healthcare professionals.
- Modernize legacy systems by introducing cloud-native patterns, microservices, and containerized deployments using Docker and Azure services.
- Integrate AI-driven components using Azure OpenAI to support clinical decision-making, automated triage, and knowledge translation workflows.
- Build and automate data ingestion pipelines using Azure Functions and event-driven workflows.
- Improve application performance through Redis caching, optimized SQL queries, and background processing services.
- Design secure cloud environments using Azure App Services, managed identities, API Management, and secure authentication flows (OAuth/JWT).
- Implement unit and integration testing using Jest and xUnit, ensuring API reliability and maintainability.
- Conduct code reviews, contribute to architecture discussions, and enforce clean code and separation-of-concerns principles across controllers, services, and data layers.
- Collaborate with multidisciplinary teams to deploy secure, compliant software across national and provincial healthcare networks.
- Built and maintained backend services using Node.js and TypeScript, applying clean architecture principles and separation of concerns.

Key Technologies:

ASP.NET Core, .NET MVC, C#, SQL Server, Entity Framework, Azure Functions, Azure App Services, Azure OpenAI, React, JavaScript, Docker, Redis, FastAPI, Python, Git, CI/CD, Next.js 14, Node.js, TypeScript, Express.js, .NET Core, REST APIs, Microservices, TypeORM

Software Engineer | Synthesis Software Technologies, May, 2022 – July, 2024

- Designed, developed, and maintained distributed, cloud-native microservices in .NET and Python for fintech, payments, and enterprise banking clients.
- Built automation tools and financial data pipelines to support real-time reporting, reconciliation, and transaction processing.
- Developed secure, high-performance APIs and messaging systems integrated with cloud services and partner platforms.
- Deployed containerized applications via Azure DevOps CI/CD, ensuring continuous integration, automated testing, and rapid delivery cycles.
- Implemented Terraform-based infrastructure as code to deploy and manage cloud environments in Azure.
- Improved system performance through telemetry, alert-driven monitoring, and distributed tracing.
- Built front-end components using Vue 3 and modern JavaScript frameworks to support enterprise workflows.
- Collaborated closely with architects, business analysts, and technical leads to design scalable systems for large enterprise clients.
- Enhanced security posture by implementing OAuth, token-based security, secret management, and identity-based access.
- Mentored junior developers and participated in engineering guilds, architecture forums, and technical knowledge-sharing sessions.

Key Technologies:

.NET Core, C#, Azure Functions, Azure DevOps, Terraform, SQL Azure, Python, Docker, Vue 3, MySQL, Event-driven architecture, REST APIs.

Software Developer | Clickatell, Feb, 2020 – September, 2021

- Delivered full-stack applications supporting enterprise messaging and communication platforms using Java, Spring Boot, Angular, and cloud services.
- Designed and built scalable REST APIs supporting communication flows, routing, authentication, and multi-channel message delivery.
- Implemented complex authentication workflows using OAuth 2.0, OpenID Connect, and third-party identity providers.
- Deployed and managed microservices using Kubernetes, Docker, and CI/CD automation.
- Maintained distributed caching and messaging systems using Redis for high-performance workloads.
- Supported database operations using SQL Server and optimized queries for scalability and high availability.
- Participated in enterprise migration projects, transitioning legacy systems into modern cloud-native microservices.
- Created automation scripts, internal tools, and developer utilities to streamline operations and reduce manual overhead.
- Collaborated in Agile teams, participating in sprint planning, retrospectives, code reviews, and requirement analysis.
- Ensured system quality through extensive testing, debugging, monitoring, and root cause analysis for production systems.

Key Technologies:

Java, Spring Boot, Angular, SQL Server, Redis, Jenkins, Kubernetes, AWS, REST APIs, Microservices.



Tech Stack

- Node.js, TypeScript, Express.js, Python (FastAPI), .NET Core, React, Next.js, Azure, Docker, Kubernetes, PostgreSQL, MySQL, Redis, CI/CD