**Nicholas Biiy Bwalley**

**Full‑Stack Software Engineer | AI & LLM Engineer**

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# Professional Summary

Proactive Full Stack AI Software Engineer with 5 years of experience building scalable web applications and deploying production-grade machine learning systems. Skilled in Python, JavaScript, TypeScript, and the MERN stack, with deep expertise in creating AI Agents, Agentic AI workflows, Retrieval-Augmented Generation (RAG), and Model Context Protocol (MCP). Known for delivering user-focused, cost-effective solutions that enhance operational efficiency. Strong communicator and team leader, effective in dynamic, remote environments.

# Core Competencies

• Python • JavaScript • TypeScript • Retrieval‑Augmented Generation (RAG) • LangChain / LangGraph • Hugging Face Transformers • OpenAI-Agents-SDK • CrewAI • AutoGen • MCP • n8n • Agentic RAG • Fast API • REST API • OAuth 2.0 / JWT Authentication • ReactJS / Redux • NodeJS • ExpressJS • Next.js • Redis Streams • MongoDB • PostgreSQL • MySQL • ChromaDB • FAISS • Cloud & DevOps (AWS, Render, Docker, GitHub Actions, CI/CD) • Kubernetes • Apache Kafka • Data Pipelines • Prompt Engineering & Fine‑Tuning • Agile / Scrum • Technical Leadership

# Work Experience

**Freelance AI Software Engineer | Remote | Mar 2020 – Present**

* Designed and delivered 15+ AI‑powered applications for clients in e‑commerce, fintech and real‑estate, automating manual workflows and reducing costs by up to 40 %.
* Built end‑to‑end RAG chatbots with LangChain, OpenAI GPT‑4o and ChromaDB, achieving customer‑satisfaction scores above 90 %.
* Fine‑tuned open‑source LLMs (Llama 3, Mistral 7B) using LoRA/ QLoRA, Quantization and PEFT, lowering inference latency by 30 % while preserving answer quality.
* Integrated AI micro‑services into existing MERN and Laravel stacks, cutting feature delivery time by 25 %.
* Led agile teams of 2–5 developers: set sprint goals, performed code reviews and mentored juniors in best practices.
* An active GitHub Account having done and completed over 160+ project in the past.

**Software Engineer Intern | Turbo G & K Networks Ltd, Nairobi | Jan 2024 – Jun 2024**

* **Revamped the customer-facing website** into a modern single-page application with **ReactJS** on the front end and **Node.js (Express)** APIs on the back end, cutting average page-load time by 55 % and boosting weekly visits by 40 %.
* **Migrated the legacy monolithic codebase to a microservices architecture** (auth, content, payments, analytics), enabling independent deployments and reducing mean-time-to-recovery from 30 min to under 10 min.
* **Introduced automated CI/CD with GitHub Actions and Docker**, adding unit tests, linting, and blue-green deployments that now ship reliable updates twice a week with zero downtime.
* **Improved SEO and accessibility** through server-side rendering, structured data, and Lighthouse audits, raising organic search impressions by 38 % in the first quarter after launch.

**Cybersecurity Analyst Intern | Senselearner Technologies Pvt., Remote | Sep 2023 – Dec 2023**

* Completed a remote Cybersecurity Analyst internship at Senselearner Technologies (Sep–Dec 2023), mastering ethical-hacking fundamentals, foot printing & reconnaissance, network scanning, vulnerability analysis, exploitation/post-exploitation, and full web-app pentesting with clear remediation reporting.

# Education

* **Exchange Program** – Challenge Driven Education (CDE) Project Sustainable Urban Planning & Development – KTH Royal Institute of Technology, Stockholm, Sweden | Aug 2024 – Jan 2025
* **BSc Business Information Technology** **(First‑Class Honors, GPA 3.8/4.0)** – Strathmore University, Nairobi, Kenya | Sep 2021 – Jun 2024
* **Diploma in Business Information Technology (Merit**) – Strathmore University, Nairobi, Kenya | May 2019 – Sep 2021

# Academic Projects

* Led AI‑driven mobility optimization project for Viksjö in Sweden using Machine Learning Algorithms to drive insights and to inform municipality modelling transport efficiency and flow.
* Built “Stora Ecom”, a full‑stack e‑commerce platform demonstrating modern UX and scalable architecture.
* Researched on Spotify’s subscription model, proposing data‑driven revenue‑diversification strategies to increase their revenue growth.

# Technical Skills

* **Languages**: Python, JavaScript, TypeScript, Java, PHP, C++, SQL, NoSQL.
* **Frameworks/Libraries:** React.js, Redux, TypeScript, Node.js, Express.js, Next.js, Tailwind-CSS, TensorFlow, PyTorch, LangChain, LangGraph, OpenAI-Agents-SDK, Crew AI, AutoGen, Hugging Face Transformers, MCP, RAG, Fast API, OAuth2.0, JWT, GraphQL
* **Databases**: MongoDB, PostgreSQL, MySQL, Chroma DB, FAISS, Astra DB, Redis.
* **Cloud & Tools:** AWS, Amazon Bedrock, Render, Docker, Git, GitHub, GitHub Actions, Postman, Linux, Webpack, Vite, MLflow, Kubernetes.

# Certifications & Achievements

* Published research article in Ready Tensor’s Agentic AI Challenge (Mar 2025).

<https://app.readytensor.ai/publications/ai-powered-customer-churn-predictor-TbSqv34bmnZy>

* Dean’s List Award, Strathmore University, Academic Year (2021–2022), (2022-2023).
* 3rd Place Award, Weightlifting – Strathmore Sports Day (Aug 2023).

# Languages

* English (C2) - Native
* Swahili (C2) - Native
* French (C1) – Professional fluency
* Swedish (A1) - Elementary
* Spanish (A1) - Elementary

# Hobbies & Interests

* Fitness coaching
* Competitive swimming
* Table tennis
* Speed‑cubing & Card Magic