Venkata Vikranth Jannatha

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Work Authorization: Indian Citizen

Professional Summary

Software and Data Engineer with dual high-distinction degrees (87% CS, 88% Data Analytics) and hands-on experience building full-stack applications and ML-driven solutions. Proficient in **Python**, **Java**, **SQL**, and modern web frameworks (**React**, **.NET**, **Spring Boot**), with proven expertise in analytics, machine learning (**TensorFlow**, **Scikit-learn**), and data engineering (**PySpark**). Delivered projects achieving **90%+ model accuracy** in churn prediction, customer segmentation, and image classification. Currently building AI agents using **OpenAI Agents SDK** and deepening Python DSA skills. Seeking roles where engineering, data science, and AI intersect.

Education

Emeris (Independent Institution of Education) — Cape Town, South Africa
Postgraduate Diploma in Data Analytics – High Distinction (88% Avg) — *Feb 2025 – Nov 2025*

Emeris (Independent Institution of Education) — Cape Town, South Africa
Bachelor of Information and Computer Science – High Distinction (87% Avg) — *Mar 2022 – Nov 2024*

Continuous Learning

AI Engineer Agentic Track: The Complete Agent & MCP Course — Dec 2025 – Present
Udemy (Self-paced Online Course)

- Learning to build AI agents that think, plan, and act autonomously using modern frameworks (**OpenAI Agents SDK**, **LangGraph**, **CrewAI**) with built-in tracing and async execution for production-ready development.
- Built multi-model comparison system querying **6 AI providers** (OpenAI, Claude, Gemini, DeepSeek, Groq, Ollama) where one AI judges which response is best; created self-correcting career chatbot deployed on **HuggingFace Spaces**.
- Developed sales automation prototype with 3 AI agents generating email drafts in parallel, manager agent selecting the best one, and sending via **SendGrid API**; learning multi-agent orchestration patterns and handoff workflows.
- Exploring research automation: planner agent creates search strategy, executes web searches, and synthesizes findings into reports—understanding how to reduce hours of manual research into automated workflows.

Software Engineering Experience

DigiCall Group – Junior Software Developer — May 2024 – Mar 2025
Cape Town, South Africa (Remote)

- Worked across three production systems, designing, querying, and optimizing **SQL Server** databases to support reliable, scalable backend operations.
- Led the migration of a legacy ASPX-based system to **ASP.NET** (Razor Pages/MVC), refactoring both frontend and backend logic to a cleaner, modular architecture.
- Resolved full-stack defects and implemented new features across C# backend and Razor/XML frontends, improving stability and user experience while following version control workflows.
- Participated in code reviews, functional testing, and integration checks before deployment, strengthening code quality and maintainability in a live production environment.

Accenture (Forage) – Junior Software Engineer Virtual Experience — Jul 2025 – Oct 2025
Remote, Online Simulation

- Conducted lifecycle analysis of a healthcare booking platform, assessing architecture, security, and Agile maturity to develop an improvement roadmap for scalability and reliability.
- Recommended hybrid **Azure IaaS-PaaS** cloud strategy with on-premises patient data storage, balancing scalability with **POPIA compliance** requirements.
- Applied **NIST Cybersecurity Framework** to assess security posture, identifying gaps in IAM and secure development, and collaborated with security teams on remediation priorities.
- Proposed transition from Waterfall to **Agile methodology** with CI/CD and DevOps practices to enable faster delivery and continuous feedback.

Data Analytics Experience

Quantium – Data Analytics Virtual Experience Program Nov 2024 – Present
via Forage (Remote)

- Cleaned and merged transaction and customer data in Python (Pandas), handling duplicates and outliers via IQR to create a unified chips-category dataset, then analyzed purchasing patterns across LIFESTAGE and PREMIUM_CUSTOMER segments.
- Identified **3 customer segments** (Older Families, Young Singles/Couples, Retirees) driving **60–70% of chip revenue**, with distinct pack-size preferences: families bought large packs (200g–300g+) for value while young singles preferred small packs (110g–150g) for convenience.
- Standardized brand names, derived price-per-gram metrics, and identified Kettle, Smith's, and Doritos as top brands, with price sensitivity varying significantly across Budget vs Premium tiers, informing targeted promotional strategy and product placement recommendations.

BCG X – Data Analytics Virtual Experience Program May 2025 – Jul 2025
via Forage (Remote)

- Analyzed **14,606 customer records** (2009–2015) in Python (Pandas/NumPy/Seaborn) to identify churn drivers, finding pricing as the primary factor – churned customers paid **16% higher** meter rental fees (€118/year) with statistical significance across all segments.
- Discovered critical vulnerability in year-2 customers who showed **27% churn rate** (2.8X baseline) and 76% price sensitivity vs 16% for established customers, enabling targeted retention strategy projected to save **€97K annually**.
- Built Random Forest churn prediction model achieving **90.3% accuracy** on 75/25 split and delivered actionable recommendations including price freeze for year 2–3 customers and early warning system at 18-month mark.

Key Technical Projects

Medical Image Classification for Brain Tumor Detection (CNN & Transfer Learning) *Nov 2024*

- Built an end-to-end MRI brain tumor classification pipeline processing **7,023 images across 4 classes** (glioma, meningioma, pituitary, no tumor) using **TensorFlow/Keras**, with automated train/test split (5,712/1,311), validation, class balance checks, and preprocessing to 224×224 RGB format.
- Trained and compared baseline CNN (**77.3% accuracy**) vs **Xception transfer learning** (58.5% accuracy), discovering that custom architectures outperformed ImageNet pre-trained models due to domain mismatch between natural and medical images; leveraged **PySpark** and Parquet for scalable image processing.

Author Identification System & NLP Chatbot *Sept 2025 – Oct 2025*

- Developed an NLP-based authorship prediction system in **Python** using **PySpark** to process 2.9M+ text records and a character-level **Bidirectional GRU** model in **TensorFlow/Keras**, achieving 50% accuracy (55% better than a Random Forest baseline of 32%).
- Engineered stylometric and linguistic features (sentence/word length, function-word ratios, punctuation density, vocabulary richness) with **spaCy** and Scikit-learn to compare classical ML vs deep learning performance.
- Deployed a **Streamlit** chatbot interface serving real-time author predictions with confidence scores, using persisted models/encoders and automated label encoding for reproducible, scalable deployment.

Vacation Request Management API *Jul 2025 – Aug 2025*

- Built a **Java Spring Boot** RESTful API with 7 role-based endpoints (3 employee, 4 manager) to handle vacation requests, approvals, and policy enforcement (e.g., 30-day annual limit, overlap detection).
- Implemented validation and access control using service-layer business rules, a **GlobalExceptionHandler**, and DTO patterns to enforce constraints and prevent unauthorized state changes.
- Wrote 29 tests (**JUnit** + **Mockito**; 15 unit, 14 integration) against an **H2** in-memory database using Spring Data JPA, ensuring reliable workflows, RBAC coverage, and edge-case handling.

Secure International Banking System *Jul 2024 – Nov 2024*

- Developed a secure full-stack international payment system with a **React.js** frontend and **Node.js/Express** backend, exposing 11 REST endpoints and supporting multi-currency transactions (ZAR, USD, GBP, INR, JPY) with SWIFT validation and MongoDB persistence.
- Designed security architecture aligned with the **OWASP Top 10**, including JWT authentication, bcrypt password hashing, input sanitization, rate limiting, Helmet headers, and hardened middleware to mitigate XSS, injection, CSRF, and session hijacking.
- Implemented a CI/CD pipeline using **CircleCI**, **Jest**, and **SonarCloud** for automated testing and static analysis, plus structured logging (Winston/Morgan) to monitor performance and security.

Time-Trackify: Android Time Tracking App *Mar 2024 – May 2024*

- Developed a full-stack Android time-tracking app in **Kotlin/Java** that enables professionals to log billable hours, set productivity goals, and visualize performance using real-time analytics dashboards.
- Implemented **Firebase Auth**, Realtime Database, and Storage for secure email/password login, user-scoped timesheets, and photo attachments with upload progress, compression, and cloud backup.
- Designed a 7-activity **Material Design 3** UI with RecyclerViews, custom Date/Time pickers, category-based timesheet management, and AnyChart-based visualizations for 7-day and monthly goal tracking.

Technical Skills

Programming: **Python** (actively strengthening DSA fundamentals), **Java**, **C#**, **SQL**

Data & ML: **Pandas**, **NumPy**, **Scikit-learn**, **TensorFlow/Keras**, **PySpark**, Seaborn, Matplotlib

Web Development: **Spring Boot**, **ASP.NET MVC**, **React.js**, **Node.js/Express**, REST APIs

Databases: SQL Server, PostgreSQL, MongoDB, MySQL, Firebase

Tools & Practices: Git, CI/CD (CircleCI), Docker, JUnit, Mockito, Jest, Agile/SDLC