ABONGILE NDUMO

Junior ML Engineer

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📍 Gqeberha, South Africa

Education

Higher Certificate in Mobile Applications and Web Development
IIE Varsity College
2024 *Passed with Distinction*

National Senior Certificate
Newton Technical High School
2018

Expertise

- Programming Languages: Python , Kotlin, JavaScript

- Machine Learning & Deep Learning: TensorFlow, Scikit-learn, Hugging Face Transformers

- Data Tools & Visualization: Pandas, NumPy, Matplotlib, Streamlit

- NLP & Computer Vision: OpenCV, NLP pipelines, sentiment analysis, image classification

👤 Profile

Motivated and fast-learning AI/ML bootcamp graduate with hands-on experience building real-world AI applications in NLP, computer vision, and ethical AI. Eager to contribute to impactful machine learning projects while continuing to grow as an AI developer. Currently seeking junior roles or internships in AI/ML development, data science, or AI product prototyping.

💼 Project Experience

2025 · **Capaciti AI/ML Bootcamp**

AIpal – Educational AI Chatbot

- Built an interactive chatbot for teaching AI basics using IBM course content.
- Included structured flows, visual aids, and ethical AI topics.
- Deployed via WebChat with no backend coding required.

2025 · **Capaciti AI/ML Bootcamp**

SmartHarvest – AI-Powered Farming Assistant

- Developed a mobile app for South African farmers to diagnose crop diseases via photo uploads.
- Included multilingual chatbot (isiXhosa, isiZulu, English) for treatment advice and livestock health checks.
- Designed to be affordable, real-time, and accessible for rural agricultural communities.

2025 · **Capaciti AI/ML Bootcamp**

Creative Kids – AI Story Generator

- Built a no-code app that generates children's stories using custom prompts based on a child's name, favourite animal, and mood.
- Designed prompts for age-appropriate, emotionally engaging content.
- Adaptable with or without live AI tools.

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Intelligent Resume Builder

- Created an AI-powered resume tool with React and Node.js to provide tailored, ATS-friendly suggestions.

- Model Development: Model training, evaluation, fine-tuning, and deployment

- Development Tools: Git & GitHub, Jupyter Notebooks, HTML/CSS

- AWS SageMaker / Google Colab

- REST APIs, Node.js / Express

- AI Fairness 360 (IBM), Ethical AI Frameworks

Certifications

- Python for Data Science & AI

- Machine Learning Basics

- Deep Learning Fundamentals

- Prompt Engineering with ChatGPT

- Trustworthy Generative AI

- AI Ethics & Bias Mitigation

- Verbal Communication & Presentation Skills

- Technical Writing & Documentation

- Project Management Fundamentals

Languages

English

Afrikaans

Xhosa

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Sentiment Analysis Dashboard

- **Working with the wider development team.**
- **Manage website design, content, and SEO Marketing, Branding and Logo Design**

2025 | Capaciti AI/ML Bootcamp

Bias Audit – Fairness Evaluation of Hiring Prediction Model

- **Audited a synthetic recruitment dataset to uncover bias across race, gender, age, and location in hiring predictions.**
- **Applied fairness metrics: Demographic Parity, Disparate Impact (80% Rule), and Equal Opportunity Difference.**
- **Implemented bias mitigation techniques: Reweighing (pre-processing) and Equalized Odds (post-processing).**
- **Results: Improved fairness without significant accuracy loss; disparate impact normalized to 0.82–1.12 range.**
- **Developed recommendations rooted in SA Bill of Rights and OECD AI Principles to support ethical hiring AI.**

Links

https://github.com/ASN-2025/portfolio-site.git

http://linkedin.com/in/abongile-ndumob8065a342

References

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