

Josias Moukpe, Senior AI/ML Research Scientist

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Professional Summary

Senior AI/ML scientist with a proven record of translating cutting-edge deep learning research into scalable, production-grade systems. Combines NASA-honed scientific rigor with the agile execution of an NVIDIA Inception founder to design, build, and deploy robust AI solutions.

Skills

- **AI Research & Core:** Generative AI (LLMs, Diffusion, RAG), Autonomous Agents, Representation Learning, Computer Vision (Segmentation, OCR), Time-Series Forecasting, Reinforcement Learning, Self-Supervised Learning, Multimodal Agentic Systems, Genetic Algorithms, Prompt Engineering.
- **Model Development:** PyTorch, TensorFlow, Keras, HuggingFace (Transformers, PEFT/LoRA, Accelerate, Diffusers), LangChain, Ultralytics (YOLO), WandB, OpenCV, NumPy/SciPy.
- **Engineering & MLOps:** Python, C++, SQL/NoSQL, MLOps (Docker, K8s, CI/CD), Model Serving (FastAPI, vLLM, ONNX), Distributed Training, Quantization, Vector Databases (Pinecone/Chroma), Cloud Architecture (AWS/GCP).

Experience

- **Algorithmic Research Group (Open Philanthropy / Coefficient Giving Grant)** Remote
Jan 2025 – Nov 2025
 - **Senior Machine Learning Researcher**
 - **Recursive Self-Improvement (RSI) Benchmarking:** Led initiatives to benchmark Frontier LLMs on autonomous ML research capabilities. Developed novel tooling and evaluation environments to quantify model performance on complex in-the-wild research tasks.
 - **AI Scientist Roadmap:** Investigated theoretical and engineering pathways to enable recursive self-improvement. Analyzed the gap between current code generation capabilities and true autonomous scientific discovery to define requirements for self-evolving systems.
- **NASA (Space Technology Research Grant)** Melbourne, FL, USA
Aug 2023 – Aug 2025
 - **Machine Learning Researcher**
 - **Dataset Build and Analysis:** Constructed high-fidelity datasets of solar events (2010–2017) combining CME events and particle flux time series. Implemented stratified sampling strategies to preserve distribution across training/testing splits, enabling robust model evaluation.
 - **Objective and Architecture Modeling:** Architected Deep Learning models and training objectives for forecasting rare Solar Energetic Particle (SEP) events. Overcame high data imbalance (>1000:1) by developing **CISIR**, ensuring mission-critical reliability for space assets.
- **Make-Print (NVIDIA Inception)** Melbourne, FL, USA
Sep 2021 – July 2025
 - **Cofounder & CTO**
 - **AI Product Leadership:** Spearheaded R&D for the "Auto-Quoting Assistant," an AI-driven tool that automates the prototyping workflow by generating instant, accurate quotes from 3D models and shop cost structures. Led the engineering team to deliver a production-grade platform integrated with inventory and project management.
 - **Strategic Growth:** Secured acceptance into the **NVIDIA Inception** startup program and obtained grant funding. Executed digital strategies that established industry thought leadership.
- **Collins Aerospace (RTX)** Melbourne, FL, USA
Jun 2020 – Aug 2021
 - **Associate Software Engineer**
 - **Safety-Critical Engineering:** Developed testing frameworks for the Airborne Collision Avoidance System (ACAS-X) and C919 aircraft, ensuring strict compliance with FAA safety standards (DO-178C/DO-254).

Education

- Florida Institute of Technology** Melbourne, FL, USA
• **Ph.D. Candidate, Computer Science** (ABD) – Available for Full-Time Work Dec 2026
B.Sc., Computer Engineering, Summa Cum Laude – Minors: CS & Comp. Math May 2020

Selected Publications

- **Highly Imbalanced Regression with Tabular Data in SEP and Other Applications:** J. Moukpe, P. K. Chan, and M. Zhang. 24th IEEE International Conference on Machine Learning and Applications (ICMLA), 2025.
- **LEVIOSA: Natural Language-Based UAV Trajectory Generation:** G. Aikins, M. P. Dao, J. Moukpe, T. C. Eskridge, and K. Nguyen. MDPI Electronics, Vol. 13, Issue 22 (Special Issue: Deep Learning for UAVs and Drone Applications), 4508, 2024.
- **Human-AI Teamwork Interface Design Using Patterns of Interactions:** K. Momose, R. Mehta, J. Moukpe, T. R. Weekes, and T. C. Eskridge. International Journal of Human-Computer Interaction (Taylor & Francis), 2024.