JULIUS MUTUGU

AI Software Engineer | Machine Learning Specialist | Full-Stack Developer

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PROFESSIONAL SUMMARY

Innovative Software Engineer with specialized expertise in AI, Machine Learning, and Full-Stack Development. Proven track record in developing healthcare systems, implementing federated learning solutions, and creating data-driven applications. Strong foundation in computer vision, blockchain technology, and microservices architecture. Passionate about leveraging technology to solve real-world problems in healthcare, agriculture, and financial sectors.

EDUCATION

Bachelor of Software Engineering
University of Eastern Africa, Baraton (UEAB) | 2025
Specialization: Artificial Intelligence & Machine Learning
Focus: Advanced AI technologies, federated learning, and software engineering principles

TECHNICAL SKILLS

Programming Languages:	Python, JavaScript, Java, SQL, R
AI/ML Technologies:	TensorFlow, PyTorch, OpenCV, Federated Learning, Computer Vision, SVM
Web Development:	Nuxt 3, Node.js, Django, RESTful APIs, HTML/CSS, Flask
Mobile & Desktop:	Flutter, Flet Framework, React Native, Cross-platform Development
Databases & Cloud:	MongoDB Atlas, MySQL, PostgreSQL, Microservices Architecture
Tools & Practices:	Git/GitHub, Agile Methodology, CI/CD, Power BI, Docker

KEY PROJECTS & ACHIEVEMENTS

Healthcare Insurance Implementation System (Kenya's SHIF Model)

Comprehensive healthcare insurance system based on Kenya's Social Health Insurance Fund model with advanced fraud detection and optimized fund allocation mechanisms.

Technologies: Python, Blockchain, Microservices, Agile, CI/CD

Key Achievements:
• Integration with multiple insurance providers
• Advanced fraud detection algorithms
• Microservices architecture implementation

Federated Machine Learning in Healthcare Systems

Research and implementation of federated learning for healthcare systems to enhance data privacy while training models across decentralized datasets.

Technologies: Python, Federated Learning, Privacy-Preserving ML, Healthcare Data

Key Achievements:
• Enhanced data privacy and security
• Decentralized model training

• Research-grade implementation

Research and Grant Management System (UEAB)

Full-stack university platform for managing research and grants with public researcher profiles, status tracking, and community forums.

Technologies: Nuxt 3, MongoDB Atlas, Node.js, Agile, CI/CD

Key Achievements:
• Public researcher profiles
• Grant status tracking
• Community collaboration features

Computer Vision for Waste Dataset Classification

Intelligent waste classification system using Support Vector Machine with batch processing techniques for large-scale dataset optimization.

Technologies: Python, OpenCV, SVM, Computer Vision, Data Processing

Key Achievements:
• Accurate waste classification
• Batch processing optimization
• Environmental impact focus

PROFESSIONAL ACHIEVEMENTS

• **709+ GitHub Contributions:** Demonstrating consistent development activity and open source engagement
• **Multiple Starred Repositories:** Recognition for quality code and innovative solutions
• **University Hackathon Participation:** Active engagement in competitive programming and data analysis
• **Research Publications:** Focus on federated learning and privacy-preserving machine learning
• **Industry-Ready Projects:** Healthcare, agriculture, and financial technology solutions

CAREER OBJECTIVES

Seeking opportunities at leading technology companies (Google, Microsoft, Amazon, Meta) to contribute innovative AI solutions and full-stack development expertise. Passionate about leveraging technology for social impact, particularly in healthcare and sustainable development initiatives. Ready to tackle complex challenges in enterprise-scale AI and software engineering projects.