

HENRY JAIYEoba (MSc)

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Highly skilled Mechatronics Engineer with a strong background in robotics, UAV systems, and Full stack web development. Experienced in developing autonomous control systems, deep learning models, and high-performance web applications. Adept at designing and implementing machine learning algorithms, embedded systems, and real-time simulations using Python and ANSYS. Proven ability to lead multidisciplinary projects, optimize software and hardware integrations, and enhance system performance through data-driven solutions. Passionate about robotics, AI-driven automation, and innovations.

SKILLS

Programming Languages: Python, C++, JavaScript, TypeScript, Dart, MATLAB

Framework and Tools: ROS2, Gazebo, Git, TensorFlow, Flask, React, Next.js, Flutter, Express.js

Simulation & CAD: SolidWorks, Fusion360, ANSYS, Gazebo, X-Plane 11

Soft Skills: Leadership, Team Collaboration, Research & Technical Writing

PROFESSIONAL EXPERIENCE

Alemdar Teknik, Nicosia

December 2025 – Present

Robotics Engineer

- Designed and fabricated detailed CAD models for robotic rovers and integrated electronic subsystems, supporting rapid prototyping and iterative design improvements.
- Collaborated closely with multidisciplinary engineering teams to analyze customer requirements and develop practical, real-world robotic and automation solutions.
- Developed a real-time inverter monitoring system using Next.js and WebSockets, enabling live data visualization, system status tracking, and improved fault detection.
- Participated in system integration and testing of hardware–software components, ensuring reliability and performance of deployed robotic systems.

American University of Cyprus, North Cyprus

Sep 2025 – Present

University Lecturer in Statistics and Programming

- Delivered engaging lectures on Introductory Mathematics, Financial Statistics, and Programming to undergraduate students, fostering critical thinking and analytical skills through interactive teaching methods.
- Designed and updated course curricula, incorporating real-world applications and current industry trends to enhance student learning outcomes.
- Assessed student performance via exams, assignments, and projects, providing constructive feedback to support academic growth and achieve high pass rates.
- Collaborated with faculty on departmental initiatives, including curriculum reviews and integration of technology tools for data analysis and visualization.
- Conducted office hours and tutorials to address individual student needs, resulting in improved comprehension and positive course evaluations.

Lantid Creative, United Kingdom (Remote)

Feb 2025 – Sept 2025

Frontend Developer

- Led development of dynamic, responsive, and SEO-optimized web applications using Next.js and React.js, guaranteeing fast load times and superior UX.

- Spearheaded migration of legacy codebases from JavaScript to TypeScript, enhancing code quality and measurably reducing runtime errors by 30%.
- Integrated RESTful APIs and Firebase, enabling real-time data synchronization for an interactive user experience.
- Developed a dashboard for a low-cost, WMO-compliant environmental monitoring solution tracking 14 climate variables, slated for large-scale deployment.
- Developed a deep learning model for satellite image analysis to accurately classify flood-affected and non-flooded areas.

Near East University Robotics Laboratory, North Cyprus

Jun 2023 – Aug 2025

Systems Engineer

- Contributed to the design and optimization of fixed-wing UAVs, including educational foam-and-balsa models with autonomous features and a large-scale agricultural drone for pesticide spraying.
- Supported development of a tilt-wing VTOL UAV prototype for transition control research, as a scaled model of a larger SAR and delivery drone.
- Assisted in the development and redesign of multirotors for both educational use and heavy-lift delivery/agricultural applications.
- Collaborated on sensor integration (IMU, GPS, barometer, LiDAR, and sprinklers), handling hardware setup, calibration, and interfacing; worked closely with physicists on sensor fusion.
- Participated in flight testing, with a focus on validating autopilot performance and refining PID tuning, transition control, and waypoint navigation.
- Used SolidWorks and ANSYS for mechanical design and FEA to analyze the structural rigidity and safety of airframe components before integration, while optimizing their weights for improved efficiency.
- Developed a UAV flight monitoring platform using Flask and React.js to visualize 11 flight parameters including yaw, altitude, and control surface deflections.
- Implemented a WebSocket-based alert system for real-time mission deviation detection and low-latency operator notifications.
- Engineered RESTful APIs to stream telemetry from onboard systems to operator dashboards.
- Authored a beginner-friendly Python library to teach students UAV control concepts using basic PID examples.
- Worked on UAV control codebases, including transition automation, communication handling, and ArduPilot/PX4 stack integration.
- Mentored over 20 students on topics such as control systems, PID tuning, mechanical design, 3D printing, sensor calibration, soldering, and microcontroller programming.

Near East University, North Cyprus

Feb 2024 – Jul 2025

Graduate Research Assistant, Mechatronics Department

- Conducted research on thermoelectric generators and concentrated thermal photovoltaic systems (CPVT), contributing to simulations, literature reviews, and data analysis in renewable energy applications.
- Assisted faculty with lab lectures, preparing demonstrations, troubleshooting equipment, and ensuring safe and effective hands-on learning experiences for students.
- Delivered supplementary lectures and tutorial sessions focused on solving exercises, enhancing student preparation for exams and improving comprehension of mechatronics concepts.
- Collaborated with research teams on project documentation, and simulation modeling, supporting the advancement of sustainable energy technologies.
- Mentored undergraduate students during lab sessions, providing guidance on technical problem-solving and fostering practical skills in mechatronics and thermal systems

Mechanical Engineering Intern

- Designed drone chassis and landing gear using SolidWorks, optimizing for performance and durability.
- Conducted finite element analysis using ANSYS to enhance structural integrity.
- Collaborated with team members to integrate design modifications and validate effectiveness.
- Participated in testing and evaluation processes to validate design effectiveness and identify areas for improvement.
- Modified and programmed the Zumoshield to perform tasks such as line following, object detection, and edge detection for a robot wrestling competition.

NOTABLE PROJECTS

Scaled Tiltwing VTOL UAV

Jan 2025 – Aug 2025

Tech Used: SolidWorks, XFLR5, Python, 3D Printing, PID Controllers

- Engineered and validated the scaled tilt-wing VTOL UAV prototype, which served as a research platform for Search and Rescue (SAR) and delivery applications.
- Designed and implemented PID controllers for pitch and roll stabilization in hover mode, successfully achieving stable transitions from hover to forward flight.
- Led the mechanical design of the tilt-wing chassis and a robust tilting mechanism, which enabled a modular design for rapid 3D printing and prototyping.
- Optimized the wing structure for both VTOL lift and forward flight efficiency, exceeding the target weight-to-thrust ratio (achieved 1.7:1 vs. required 1.5:1).
- Conducted structural analysis using FEA (ANSYS/SolidWorks) to ensure airframe integrity during the high-stress transition phases and reduce hover drift by 30% from the initial prototype.
- Created SITL (Software-in-the-Loop) scenarios in MATLAB to safely test controllers, perform PID tuning, and validate complex system dynamics before hardware deployment.

Easyflight, Python Autopilot and Flight framework

Apr 2025 (maintained)

Tech Used: Python, PID Controllers

- Designed and implemented a modular flight simulation framework in Python with decoupled components for aircraft dynamics, navigation systems, and autopilot controls.
- Created a flexible API architecture allowing seamless switching between virtual simulation and X-Plane interface without code changes.
- Engineered a stateful simulator with comprehensive history tracking for post-flight analysis and visualization.
- Implemented thread-safe visualization components using Tkinter and Matplotlib for real-time flight data monitoring.
- Developed robust PID controller implementations with anti-windup protection and configurable tuning parameters for aircraft attitude and navigation control.
- Created dynamic visualization tools for both real-time and post-flight analysis using Matplotlib and Plotly.
- Created a simplified flight dynamics model in the virtual simulator incorporating realistic aircraft behavior with configurable parameters.

Humanoid Robotic Head, DUX

Sep 2024 – Nov 2024

Tech Used: Python, Python, Raspberry Pi 4B, SolidWorks

- Designed and 3D-printed a robotic head with servo-controlled jaw & cheek movement.
- Developed an electrical system with raspberry pi, microphones, speaker for audio input and output

- Integrated speech processing algorithms in python with 90% accuracy in keyword detection
- Achieved natural language interaction using custom LLM integration.

EDUCATION

Near East University, North Cyprus

Master of Science, Mechatronics Engineering

- CGPA: 4.0/4.0

Near East University, North Cyprus

Bachelor of Science, Mechatronics Engineering

- Awards: First Class, Valedictorian
- Relevant Coursework: Manufacturing Technology, Embedded Systems, Robotic Systems, Differential Equations, Control System, Linear Algebra, Dynamics, Statics, Reverse Engineering Methods.

Valencia College, Ibadan

Secondary Education, **Science Class**

- Awards: Best Graduating Student, Charismatic Leader Award

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Technical Lead for Code Crafters Community, NEU

Oct 2023 – Jul 2025

- Organized workshops and seminars that provided members with opportunities to enhance their professional skills.
- Coordinated with other CC administrators to ensure events align with the organization's goals and objectives.
- Planned and managed competitions hosted by the community.
- Ensured that events are inclusive and promote diversity within the engineering community.
- Developed training materials and lesson plans for Python, JavaScript and C++ languages.
- Provided hands-on instructions to students ensuring that concepts were effectively communicated and understood.

Engineering tutor for WeTutor, NEU

Jan 2022 – Sep 2023

- Developed beginner-friendly curriculum materials for engineering courses.
- Organized tutorial sessions to teach undergraduate students core engineering courses.
- Collaborated with other WeTutor tutors to prepare mock exams and tests for students.
- Tutored over 60 undergraduate engineering students.

Science Class Representative tutor for Valencia, Nigeria

Jan 2018 – July 2019

- Represented science class as a speaker at multiple high schools in Ibadan.
- Delivered informative presentations to grade 9 students about science career opportunities and curriculum expectations.
- Effectively communicated scientific concepts in an engaging and understandable manner to a young audience.

PUBLICATIONS

1. **Jaiyeoba, O. H.**, Kolamroudi, M. K., Kavalcioglu, C., Özkan, C., & EL Khatib, S. (2025). *Implementation approaches of thermoelectric generator in photovoltaic system: A review*. *Archives of Advanced Engineering Science*, 1-20. <https://doi.org/10.47852/bonviewAAES52024806>
2. Kolamroudi, M. K., **Jaiyeoba, O. H.**, & Safaei, M. I. B. (2025). *Application of artificial intelligence for development of thermal concentrating photovoltaics systems: A comprehensive review*. *Solar Energy*, Volume 301, 113937. <https://doi.org/10.1016/j.solener.2025.113937>

CERTIFICATIONS

Data Scientist Professional – DataCamp
Machine Learning Specialist – DeepLearning.AI
Game Development with Unity – PixelCodex