Bischoy Isaak

Aerospace Engineering Student

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🔗 bisaak.com ⌗ bishoy-ensoliman

WORK EXPERIENCE

Flight Test Engineer - Working Student

ERC-System

📅 Jan 2025 - Present 📍 Germany, Munich

- Developed Python tools to support aircraft testing.
- Conducted data analysis on test flight results, improving model accuracy and reliability.
- Collaborated with engineering teams to integrate data-driven methods into system design.

Mechanical Engineer - Internship

Tracland

📅 Aug 2024 - Oct 2024 📍 Egypt, Alexandria

- Performed maintenance and assembly of heavy equipment (bulldozers, excavators) with focus on IC diesel engines, transmissions, and hydraulic systems.
- Diagnosed mechanical faults and supported system overhauls, gaining practical experience in engine thermodynamics and fluid power systems.
- Assisted in assembly and testing of subsystems, applying engineering principles to real-world machinery.

Software & Systems Engineering Roles

Arnell GmbH, Avi Medical, FlixBus, EGYM GmbH, Pixelogic Media, Bibliotheca Alexandrina

📅 Sep 2017 – Jul 2024 📍 Germany & Egypt

- Designed and implemented embedded systems and real-time data pipelines.
- Applied C++, Python, and MATLAB for control systems, data processing, and simulation.
- Worked on projects involving sensors, automation, and computer vision — experience transferable to aerospace avionics and systems engineering.

Control Systems Engineer - Internship

Petroleum Pipelines Company

📅 August 2016 📍 Egypt, Alexandria

- Supported industrial control systems using PLCs and DCS for automation of petroleum pipeline operations.
- Worked with sensors and transducers for flow, pressure, and temperature monitoring.
- Applied automatic control engineering concepts to enhance system stability and reliability.

EDUCATION

BSc. Aerospace

Technical University of Munich

📅 Oct 2023 - Sep 2026 (Expected)

BSc. Computer & Systems Engineering

Faculty of Engineering AU

📅 Sep 2012 – Jun 2017

TECHNICAL SKILLS

Aerospace & Engineering Tools
- FEM, CFD, SolidWorks, Control Systems, Matlab, 3d printing.

Electric Tools
- KiCAD, DAQs, Oscilloscopes.
- Embedded Systems, soldering.

Programming & Data Analysis
- C/C++, PYTHON, JAVA, C#, Git, AI,
- digital Signal/Image Processing, Computer Vision.

Languages
- English (C1), German (B2), Arabic (Native), French (A2)

PROJECTS

Self-balancing robot
- Developed a two-wheeled robot using embedded systems and control theory.
- Programmed PID control loops for balance stabilization using sensor feedback.

Driving Simulator
- Built a physical driving simulator by interfacing a real VW Polo instrument cluster with the DriveNG simulator.
- Developed a Python client to send data via UART to an Arduino, then used CAN protocol to communicate with the cluster.
- Designed custom electronic circuits to condition automotive signals (12V <-> 5V) for reliable hardware integration.
- Demonstrated advanced skills in embedded systems, CAN bus communication, and hardware–software integration.
- Designed and 3D printed some interfacing parts.

RC Car with Automated Driving Features
- Designed and built a rechargeable LiPo battery RC car model using ESP32, servo motor, dc motor, motor drivers, LEDs, and ToF sensors.
- Developed a web app with WebSockets for real-time vehicle control and monitoring.
- Implemented control theory for speed and direction regulation.
- Integrated autonomous functions such as obstacle detection with automatic stop, autoparking, and adaptive lighting.