Nicolas Zachariou



UAV Embedded Systems Engineer

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Cellock

May 2021 – present

Zeus UAV platform

Develop, test and deploy the onboard and ground-control software used in production and in live Zeus demonstrations. Build working prototypes, test them on hardware and use flight data to verify how they perform.

Drone autonomy. Develop autonomy software for coordinated multi-aircraft flight (swarming) and navigation in GNSS-denied environments.

Edge computing. Train and integrate computer vision models for onboard processing. Use recorded aerial footage to evaluate how well they detect vehicles on roads and vessels at sea.

Target acquisition and guidance. Develop and test visual tracking and guidance features for Zeus. Evaluate tracking consistency against recorded flight footage.

Ground control. Build the mission-planning and fleet-monitoring tools operators use to view live video and aircraft telemetry. Develop recording and playback tools for post-flight review.

Software Development Team Lead Jan 2025 – present

Lead the Cellock software development team and coordinate with hardware engineers on the integration of onboard and ground-control systems.

Full-Stack Web Developer May 2021 – Jan 2025

Developed web and mobile applications, along with the APIs and databases that supported them.

Additional experience

PsychApp Developer, University of Cyprus Jul 2020 – Feb 2021

Built a research portal and mobile app for a study of the psychological experiences of cancer patients. Researchers created questionnaires that participants completed daily on their phones.

thecyprusprintingstore · Creator and Designer

Design and produce made-to-order 3D prints, from the initial concept to the finished piece.

thecyprusprintingstore.com

Education

Master's in Artificial Intelligence and Visual Computing Oct 2021 – Jun 2024

University of West Attica

Bachelor's in Computer Science Jan 2017 – Jan 2021

University of Cyprus · GPA 8.14/10

St. George Lyceum, Lakatamia Sep 2012 – Jun 2015

Graduated with 18.33/20.

Embedded systems projects

Flight data and computer vision

Flight telemetry and mapping. Built a live flight-data display and tools that match aerial images to positions in the flight log so the images can be used to make maps.

Aerial video analysis. Created offline tools for detecting boats in drone footage and reviewing vehicle and vessel tracks frame by frame.

Roadline. Developed a roadside traffic counter that detects passing vehicles locally and reports counts by direction to a dashboard.

Laser Tag

Laser tag guns and wearables. Built prototype laser tag guns and wearable hit sensors. Designed the guns' 3D-printed housings and wrote the software that registers shots and gives players hit feedback.

Arena positioning. Developed tools for placing fixed positioning anchors on an arena floor plan and a 3D viewer for checking gun orientation during motion tests.

Wireless ranging. Built prototypes that estimate the distance between two devices and show the measurement as the devices move.

Arena control and game modes. Built the arena control system for setting up matches and running rounds. Implemented Domination, Team Deathmatch and Seek and Destroy, each with its own objectives and scoring rules.

Arena monitoring displays. Created live views of the arena map, team standings, objective status and match clock so operators and players can follow the same match across multiple screens.

Connected devices and controls

PiHome. Developed a home security and automation platform that lets residents monitor their home, manage security settings and control lighting.

TinyCast and display projects. Created a tool for publishing text and pixel art to small displays. Prototyped wireless display controls, connection monitors and a home dashboard.

Infrared controls. Developed a programmable air-conditioning remote that learns and reuses commands from an existing handset.

Sensing and electronics

Garden monitoring. Designed a wireless garden sensor for monitoring soil moisture and ambient temperature.

Portable power. Designed a compact, rechargeable power supply for portable electronics.

Technical skills

Programming Python, C, C++, C#, Swift, Java, TypeScript, JavaScript and SQL

Engineering Embedded software, computer vision, flight telemetry, hardware integration, mobile and desktop applications

Languages and service

Proficient in Greek and English. Promoted from cadet to lieutenant during army service (Jul 2015 – Jan 2017). Awarded the Scout Diploma of Democracy in 2014.