

MATTHEW MIGLIO

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EDUCATION

Kettering University, Flint, MI - Bachelor's in Computer Science

Expected Graduation: April 2026

TECHNICAL SKILLS & TOOLS

Languages & Frameworks: Python, JavaScript, TypeScript, React, Next.js, Node.js, SQL, Docker

Machine Learning: PyTorch, TensorFlow, ONNX, Hugging Face, Mediapipe, Scikit-learn

Cloud & DevOps: CI/CD, AWS (SST, EC2, Cloudwatch, S3, IAM, Lambda, API Gateway), GitHub Actions

Collaboration: PyTest, GitHub PR/code reviews, Branched Development, Agile (Asana)

WORK EXPERIENCE

Magna Electronics, Southfield, MI

Apr 2024 – Present

- Led rapid integration of **next-gen occupant monitoring cameras** with supplier algorithm stacks and in-vehicle compute systems, iterating on data collection, benchmarking, and algorithm refinement to achieve **CES demo readiness within weeks**.
- Built a **real-time cloud AI** proof-of-concept for gesture recognition, streaming camera feeds to **AWS (Lambda, EC2, API Gateway)** for inference, demonstrating feasibility of off-chip inference.
- Designed and launched a **driver-drowsiness profiling app** that aggregates **Driver Monitoring System (DMS)** output in the cloud to enable **personalized baselining** and reduce false positives, fully **integrated with the company's ROS2 sensor network**.
- Collaborated with global R&D and algorithm suppliers to benchmark in-vehicle AI systems, diagnose performance gaps, and optimize sensor integration toward **Euro NCAP-compliant driver monitoring performance**.

Projects

Computer Vision Annotation Platform for Clash Royale

Built a full-stack, web-based annotation platform with **Next.js** and **Supabase**, crowdsourcing **170K+ labeled images** in the first month. Trained **ResNet-18** and **YOLO** models for real-time game state detection, deployed via **ONNX** on **AWS Lambda/API Gateway**, with plans for **tiered SaaS distribution**. Designed a full data, model, and deployment pipeline enabling scalable inference and dataset expansion for research and automation use.

Cloud-Connected Robot Fleet Simulator & Dashboard

Built an autonomous **fleet simulation system** with real-time telemetry, lifecycle orchestration (**PostgreSQL, Supabase, Python**), and a **Next.js/TypeScript** dashboard for monitoring and control, enabling seamless **scaling to real robot fleets**.