Nikhil Herdt

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Applied AI Engineer

WORK EXPERIENCE

Casmium, LLC | casmium.com — 08/2020 - Present

Co-Founder

Identified the lack of actionable performance data in youth sports and the inefficiency of paper-based tracking. Founded and built an AI-powered analytics platform that digitized data collection via mobile devices, analyzed performance in the cloud, and presented insights in an accessible format coaches could use to improve training.

- Architected and built a full-stack AI platform spanning iOS applications, cloud services, and web tooling, supporting multiple products with distinct technical and business requirements.
- Led development of Velo Tracker, a standalone mobile product that performs real-time, on-device computer vision and physics-based modeling to measure baseball throw velocity using only a smartphone camera.
- Designed and maintained scalable cloud backends (Google Cloud Functions, APIs, data storage) to support data ingestion, processing, and analytics across products.
- Served as technical decision-maker and client-facing lead, translating user needs and business goals into concrete engineering trade-offs and system designs.

University of Iowa Hospitals & Clinics — 05/2023 - 05/2026

Research Developer

Addressed the challenge of vision-impaired patients navigating open, dynamic spaces by developing AI-driven assistive technology to deliver real-time guidance and alerts via consumer devices.

- Built a LiDAR- and computer-vision–based navigation system for visually impaired users, converting raw spatial perception into real-time audio and haptic feedback usable during active navigation.
- Integrated iPhone, Apple Watch, AirPods, Arduino, and Raspberry Pi into a single real-time system, resolving latency, synchronization, and interoperability constraints across consumer and embedded hardware.
- Applied sensor fusion and real-time processing techniques to improve obstacle detection reliability in dynamic indoor environments.
- Worked directly with clinicians and researchers to translate patient safety, usability, and deployment constraints into concrete system requirements and engineering decisions.

MNX Global Logistics — 02/2022 - 06/2022

Business Intelligence Management Intern

Applied predictive modeling to improve operational planning in enterprise logistics environments.

- Built forecasting models to predict shipment volumes across multiple regions, enabling proactive capacity planning and resource allocation.
- Integrated model outputs into Power BI dashboards, allowing operations and leadership teams to act on predictions without direct technical involvement.
- Worked within existing enterprise systems to deploy models in a form compatible with real-world data pipelines and reporting workflows.

PROJECTS

AI Cycling Safety System

Developed a multi-camera AI system leveraging object detection and LLMs to alert and train child cyclists through real-time auditory and haptic feedback, enhancing hazard awareness and situational safety.

Wearable Poker Assistant

Built a wearable AI system using Raspberry Pi, camera-based object detection, and an LLM backend to teach new poker players, providing real-time strategy guidance and explanations through a mobile app.

Ultrasound Imaging Denoising AI

Created and trained a deep learning model to reduce noise in ultrasound images caused by machine or patient variability, improving diagnostic clarity without obscuring critical biological structures.

EDUCATION

Master's in Electrical & Computer Engineering

University of Iowa

Bachelor's in Biomedical Engineering

University of Iowa

SKILLS

AI & Intelligent Systems: Computer Vision, Object Detection, Machine Learning, Sensor Fusion, Real-Time Inference, LLM Integration, Model Deployment

Systems & Software Engineering: iOS Development, Embedded Systems, Cloud Services, API Design, Real-Time & Distributed Systems

Data & Analytics: Predictive Modeling, Data Pipelines, Dashboard & Visualization Development, Translating Model Outputs into Actionable Insights

Product Development: Problem Framing, Technical Strategy, Build vs. Buy Analysis, End-to-End System Ownership, Stakeholder Communication, Agile & Rapid Prototyping

Programming Languages: Python, Swift, Javascript, Java, C++