Tom Murphy, PhD | Oakland, CA

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Technical Summary

ML for IoT & Edge · Real-time ML systems · Computer vision · MLOps · Physics-informed models

About Me

I design intelligent systems that bridge AI, physics, and real-world constraints. I thrive in fast-paced, mission-driven startups building smart, connected products or infrastructure. With experience spanning IoT hardware, edge ML, and scalable MLOps, I bring curiosity, pragmatism, and a bias toward shipping.

Experience

Data Scientist | Fortune Brands Innovations (Flo by Moen) | 2022 - 2024

- Built and productionized **FloSense 3.0**, the machine learning leak detection system for a smart water shutoff valve (SWS)
- Developed and maintained **GCP-based streaming data + model pipelines** (~540 GB/day) for real-time anomaly detection
- Reduced false shutoffs by 40% while maintaining leak detection performance
- Saved ~$10k/yr in cloud compute costs by reducing model training time by 95%

Senior Data Scientist | Lineage Logistics | 2021

- Designed patented algorithms for manual and robotic **pallet sequencing optimization** in high-throughput cold storage environments
- Detected subtle customer ordering anomalies; delivered ~$800K/year in cost savings

Head of R&D | Nebia (acquired by Brondell) | 2016 - 2017; 2019 - 2020

- Led hardware integration and thermal-fluid R&D for **next-gen consumer water systems**
- Delivered 3 successive products on a 1-year cadence, from concept through manufacturing

Controls Optimization Lead | Nevados Engineering | 2018

- Developed and deployed sun-tracking control algorithms for utility-scale solar hardware
- Implemented **edge-embedded real-time sensing** via all-sky camera

Research Scientist | NASA Ames Research Center | 2014 - 2016

- Conducted physical modeling and experimentation in renewable energy and sensor design
- Invented a novel **optical probe for 3D light field measurement** in turbid media

Programming Languages and Tools

ML & Data Science: Python (PyTorch, scikit-learn, NumPy, pandas), R (tidyverse, ggplot2)
MLOps & AI Infrastructure: Google Cloud, AWS, shell scripting, git, Kafka, Spark
AI-enhanced dev: Gen-AI (ChatGPT, Copilot) to prototype quickly and boost engineering velocity

Education

PhD, Mechanical Engineering (Thermal-Fluid Science), **UT-Austin**
BS, Mechanical Engineering, **Brown University**
Certificate in Data Science: Statistics and Machine Learning, Johns Hopkins (Coursera)