

# Machine Learning Engineer (Computer Vision / Edge AI)

**Position Type:** Full-Time

**Location:** Pittsburgh, PA (5 Days On-Site; Relocation Assistance Available)

**Salary Range:** \$125,000 – \$175,000 + Early-Stage Equity

## Role Overview

We are seeking a pragmatic, hands-on **Machine Learning Engineer** to join an early-stage, seed-funded industrial AI company. Our platform pairs high-resolution line scan cameras with embedded software and deep learning to deliver real-time, inline quality control and defect inspection for high-speed continuous manufacturing lines.

In this role, you will own the end-to-end lifecycle of computer vision and anomaly-detection models. You will work directly with real-world line imagery to design, fine-tune, and optimize deep learning algorithms—deploying them directly onto edge hardware running at production speeds next to industrial cameras. Joining a lean founding team of ~10 full-time engineers, you will have significant ownership over the core ML pipeline and play a critical role as we scale globally.

## Key Responsibilities

- **Model Development & Training:** Design, train, and evaluate deep learning models for defect detection and classification using live industrial imagery.
- **Anomaly Detection:** Develop models for unsupervised or self-supervised anomaly detection where labeled defect examples are scarce or ill-defined.
- **Edge Optimization & Deployment:** Optimize and profile models for edge deployment, balancing model accuracy with latency, memory, and throughput constraints on line hardware.
- **Pipeline Integration:** Partner closely with hardware and embedded systems engineers to integrate inference pipelines seamlessly from raw camera capture to real-time decisions.
- **Data Infrastructure & MLOps:** Build robust data workflows for labeling, dataset curation, augmentation, and automated retraining loops to maintain model precision over time.
- **Production Reliability:** Diagnose and troubleshoot model performance issues on live production lines, leveraging real-world field data to drive continuous performance updates.

# Core Requirements

## Experience & Mindset

- **Professional Experience:** 1–5 years of hands-on experience as a Machine Learning Engineer or Applied Data Scientist.
- **Early-Stage Agility:** A gritty, results-oriented startup mindset—comfortable navigating messy real-world data and collaborating in-person with cross-functional technical teams.
- **Pragmatic MLOps Focus:** A preference for model optimization, inference infrastructure, and deployment reliability over purely theoretical/notebook research.
- **On-Site Collaboration:** Willingness to work on-site 5 days a week in Pittsburgh, PA, with occasional visits to customer manufacturing sites for field deployments.

## Strategic & Functional Competencies

- **Deep Learning & Vision Systems:** Proven track record training, evaluating, and deploying computer vision models at scale.
- **Edge ML Performance:** Familiarity with edge model deployment strategies—including quantization, ONNX, TensorRT, and hardware-constrained inference profiling.
- **Software Engineering Discipline:** Ability to package models into production-ready inference services and clean ML APIs.

## Technical & Tooling Fluency

- **Core Languages:** Deep proficiency in Python.
- **Frameworks & Libraries:** Proficiency with PyTorch or TensorFlow, alongside classical computer vision libraries (e.g., OpenCV, PIL).
- **Infrastructure & Acceleration (Nice-to-Have):** Experience with CUDA programming, GPU hardware optimization, and cloud platforms (AWS/GCP/Azure).

# Interview Roadmap

1. **Introductory Sync:** Initial 30-minute screening conversation to review career alignment, background, and role details.
2. **Technical Deep Dive:** Technical conversation and live problem-solving session with the Lead Machine Learning Engineer.
3. **Executive & Product Alignment:** Deep dive with the Founder/CEO and Head of Product focusing on platform architecture and company vision.
4. **Full Team Conversation:** Informal sync with the broader engineering team to assess culture fit, communication, and collaborative style.

5. **Offer Extended:** Final reference verification and offer presentation.