PATRICK MACLEA

SENIOR DATA SCIENTIST

CONTACT

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- (781) 361-4045
- Boston, MA
- LinkedIn
- GitHub

EDUCATION

University of New Hampshire
B.Sc. Mechanical Engineering
Cum Laude, 2018

SKILLS

Machine Learning & AI
PyTorch, TensorFlow, Scikit-Learn, MLflow, LangGraph, LLM Pipelines, Knowledge Graphs, Deep Learning, NLP, RAG, Embeddings, XGBoost, Feature Engineering, Model Evaluation

Data & Systems
SQL, Pandas, NumPy, MongoDB, Kafka, ETL Pipelines, Streaming Data Systems

Infrastructure
AWS, Docker, Terraform, Git, Bash

Languages
Python, SQL, C/C++

Industrial Domain
Automated Manufacturing, Industrial Robotics, PLC Controls, Electromechanical Systems, Predictive Maintenance, MES Integration

INTERESTS

Skiing, Markets & Investing, Mountain Biking, Guitar

PROFESSIONAL SUMMARY

Senior Data Scientist with experience building production ML, NLP, and LLM systems and leading automation software at Tesla's EV manufacturing lines. Combines industrial systems expertise with modern machine learning and statistical modeling to deliver measurable business impact. Motivated by applying ML to hard, real-world problems — from manufacturing automation to cybersecurity intelligence.

EXPERIENCE

Senior Data Scientist
Jan 2025 – Present

Recorded Future
Previously: Data Engineer, Data Science Intern

- Promoted twice within first year, from intern to senior data scientist.
- Architected a multi-stage NLP and ML pipeline for domain ownership resolution using transformer models, large-scale internet metadata, and active-learning training loops, expanding TPI coverage of domain ownership by 10% and growing.
- Built end-to-end entity resolution systems combining knowledge-graph ontologies, LLM-generated training data, and ML scoring to link entities across Recorded Future and partner platforms — automatically resolving ~75% of entities from the partner dataset to Recorded Future's intelligence graph at 98% precision, enabling cross-platform data and frontend integration.
- Built NLP-driven synonymization of software product entities in the knowledge graph using text classification and embedding models, increasing client coverage of software vulnerability-to-watchlist connections by 10%.
- Championed ML best practices across the software organization by leading ML Guild presentations on modeling techniques, tooling, and production ML workflows.
- Developed internal data and ML platform tooling (ETL pipelines, MLflow integration, LangGraph orchestration, CI/CD workflows) that standardized how the team builds and ships ML and LLM systems.

Senior Automation Software Engineer, Team Lead
2020 – Dec 2023

Tesla
Previously: Automation Software Engineer

- Led a cross-functional team managing software, controls, and data systems for fully automated EV battery manufacturing equipment.
- Improved manufacturing cycle time by 20% (+1,000 packs/week) through software-driven process optimizations.
- Designed conveyance optimization algorithms, reducing product starvation to the next production zone from 5% to 2%.
- Drove data-driven process improvements using statistical analysis that increased equipment availability from ~80% to 90% across the production zone.
- Served as a primary escalation point for production line-down events, rapidly diagnosing and resolving software, controls, and hardware issues to minimize downtime on high-volume manufacturing lines.
- Developed Python REST APIs, real-time data visualization dashboards, and anomaly detection systems that connected equipment data to MES and monitoring platforms — enabling bottleneck analysis, quality issue identification, and predictive maintenance across the production zone.
- Led Beckhoff PLC development standards and mentored engineers and technicians on troubleshooting across the production line.

Automation Engineer
2018 – 2020

Superior Controls

- Developed tooling to auto-generate PLC programs from functional specifications, cutting manual programming time across projects.
- Delivered PLC control systems for biopharma manufacturing clients, from design specification through integration and validation.