Max Pierson

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Education

UNIVERSITY AT BUFFALO | MAY 2026

- M.S. Engineering Science (Artificial Intelligence)
- GPA: 3.93

CASE WESTERN RESERVE UNIVERSITY | MAY 2020

- B.S. Mechanical Engineering (Aerospace concentration)
- GPA: 3.3

Relevant Coursework

- Algorithms Analysis and Design 1
- Intro Machine Learning
- Basics of AI
- Numerical Mathematics for Computing and Data Science
- Reinforcement Learning
- Intro Pattern Recognition
- Data Intensive Computing
- Computer Vision and Image Processing
- Experiential Projects in Artificial Intelligence and Data Science
- Optimization & AI for Next-Gen SmartGrid

Skills

- Programming with Python, PyTorch, NumPy, Pandas, Scikit-learn
- Data visualization with: Matplotlib, Seaborn
- Database tools: Databricks, MongoDB
- Use of Machine Learning Algorithms and Neural Networks for Classification, Regression, and Reinforcement Learning projects
- Team collaboration and coordination

Project Work

CHRONIC HEART FAILURE TITRATION ENGINE | RAMASESHU0.GITHUB.IO/TIDE-HF

- Extracted a cohort of 137k CHF admissions from MIMIC-IV – merging relevant demographics, labs, vitals, ECG, diagnoses, and medications into a visit-based dataset
- Developed a synthetic generation data pipeline anchored on the CHF cohort to produce weekly trajectories of 14 timepoints with measurements of vitals, ECG features, labs, and GDMT dosages
- Trained 11 LightGBM binary classifiers to detect medication adverse effects on features extracted from the weekly trajectories; reached a macro validation AUROC of 0.98
- Built a rule-based GDMT titration engine with lab gating and contraindication checks to produce auditable dose recommendations toward guideline targets, including a GDMT strategy selector.

US RENEWABLE ENERGY DATA ANALYSIS

- Built a Databricks delta lake of U.S. renewable generation and storage data sourced from the EIA-860 plant dataset

- Authored Model Context Protocol (MCP) tools that expose the lake to LLM agents for natural-language comparison and analysis across regions

SKIN CANCER DETECTION USING LATENT SPACE MAPPING

- Trained a U-Net autoencoder on benign skin lesions [from ISIC2024] and used latent-space reconstruction error to flag malignant samples — a one-class anomaly-detection framing for lesion classification
- Boosted accuracy by concatenating the latent encoding with hand-crafted features into an SVM classifier

MULTIMODAL MOVIE GENRE CLASSIFICATION | MAXPIERS.GITHUB.IO/EAS510

- Assembled a balanced multimodal dataset of posters, plot summaries, and genre labels via the [TMDb] API
- Trained image-only (CNN), text-only (transformer), and late-fusion multimodal classifiers; the fused model outperformed both unimodal baselines

Work Experience

OUTSIDE PLANT ENGINEER I | WINDSTREAM | DEC 2020 – JAN 2024

- Designed work orders to provide dedicated circuits to businesses and individual households
- Fielded and designed fiber optic cable buildouts for Fiber-to-the-Home capabilities as part of the government's RDOF program
- Coordinated new pole placements and cable reroutes with local power companies and PennDOT
- Trained new hires on design software and workflow processes

MECHANICAL ENGINEERING INTERN | HODGES NATC | SEPT – DEC 2019

- Supported engineers in data collection on vehicle performance and BoM updates for design projects
- Developed tests to verify technicians' abilities in CNC and technical drawing comprehension

MECHANICAL ENGINEERING INTERN | PCC AIRFOILS | JAN – MAY 2019

- Developed processes for ceramic mix testing and kiln temperature data logging
- Performed kiln qualification trials and temperature probing to verify process accuracy
- Delivered monthly presentations to engineering leadership

MECHANICAL ENGINEERING INTERN | TRUCK-LITE | MAY – AUG 2018

- Developed and altered manufacturing Work Instructions to ensure process consistency
- Performed time studies and defect tracking to enhance production quality and efficiency

Activities & Interests

- Guitar, running, gardening, Bananagrams