BENJAMIN E. JORDAN

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LinkedIn | Website

SKILLS

Languages: Python, Java, TypeScript, C++, C   **Other**: Git, Docker, AWS, Runpod, Linux, HuggingFace, LaTeX

Tools/Libraries: NumPy, Spark, Pandas, Pytest, PyTorch, Scikit-learn, Boto3, Faiss, DDP/FSDP, Optuna, Angular, Selenium

EXPERIENCE

Software Engineer @ Amazon   Oct 2024 – Present
Measurement, Ad Tech, & Data Science   *New York, NY*

- Productionized brand-awareness model inference workflow, which processes 2+ million rows of customer data daily, aggregating survey responses and model predictions for brand lift reports
- Designed and delivered update to this workflow to support multi-question, multi-choice, and breakout group metrics
- Designed and delivered a model training automation workflow in 2 months, ahead of scoped goal
- Worked extensively on ML ops and on large-scale spark ETL jobs (AWS EMR and AWS Glue)
- Collaborated frequently with surveys science team to implement methodologies for measuring advertising performance

Machine Learning Engineer @ Northrop Grumman   Feb 2024 – Oct 2024
Autonomous Intelligence & Robotics Lab   *Denver, CO*

- Enabled accurate, real-time object detection by distilling GroundingDINO into YOLOv10, decreasing inference latency on Jetson Orin from 0.6s to 0.08s
- Researched techniques for implementing and evaluating retrieval-augmented generation (RAG) systems, and led the technical side of a project focused on classified PDF retrieval and question answering
- Implemented a RAG system utilizing locally running vision-language models for PDF retrieval and Q&A
- Wrote a survey on techniques for mitigating a lack of labeled training data: active learning, semi-supervised learning, knowledge distillation, and synthetic data generation

Machine Learning Engineer @ KLA   May 2023 – Aug 2023
Internship   *Ann Arbor, MI*

- Independently worked on semiconductor defect detection algorithms
- Fine-tuned and quantized vision transformers for efficient and robust defect classification with limited data
- Presented project during poster board session and was invited to give a virtual talk on transformers and transfer learning

Software Engineer @ Carestream   May 2022 – Aug 2022
Internship   *Rochester, NY*

- Developed and maintained backend functionality in Carestream's ImageView x-ray software

PROJECTS

Entropy Audio   Dec 2023 – Present
Personal project focused on creating novel sound generation tools for composers

- Curated a multi-terabyte audio sample dataset using web scraping, open-source data, LLM description generation and augmentation, and manual labeling
- Created code packages for training, metrics, model code, and data using open source codebases as starting points: stable-audio-tools (Stability AI), audiobox-aesthetics (Meta FAIR), audiocraft (Meta FAIR)
- Trained 1B parameter audio diffusion model and performed post-training using DPO for diffusion models
- Created a serverless endpoint on Runpod to run the model
- Also wrote a webapp using Angular, and used AWS lambdas for the other backend logic
- Designed a UI for text-based audio generation that incorporates a preference data collection flywheel into the workflow

EDUCATION

Cornell University   2022 – 2023
Master's in Computer Science, Concentration in Machine Learning   *Ithaca, NY*

Rochester Institute of Technology   2018 – 2022
Bachelor's in Computer Science, Minor in Music, Magna Cum Laude, Presidential Merit Scholarship   *Rochester, NY*

NOTABLE COURSEWORK

Machine Learning: Large-Scale Machine Learning, Machine Learning Theory, Reinforcement Learning, Machine Learning Hardware and Systems, Computer Vision, Numerical Linear Algebra, Natural Language Processing,

Systems: Distributed Computing, Parallel Computing, Computer Architecture, Operating Systems, Networks