Benjamin E. Jordan

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LinkedIn | Portfolio Website | GitHub

Education

Cornell University [Graduated Dec 2023]
M.Eng. in Computer Science - Concentration in Machine Learning and Systems - [3.76 GPA]

Rochester Institute of Technology [Graduated Dec 2022]
B.S. in Computer Science - Minor in Music and Technology - [3.65 GPA, 3.94 avg during 2nd half of degree]

Skills

Programming: Python, NumPy, PyTorch, C++, C, Java, C#, CUDA, Scikit-Learn, Angular, Javascript, SQL
Other Skills: Git, Linux, Unit Testing, Agile Development, LaTeX

Experience

Machine Learning Engineering Intern @ KLA [May 2023 - Aug 2023]
- Independently researched and implemented semiconductor defect detection algorithms
- Fine-tuned vision transformers for robust classification with limited customer data
- Applied quantization and JIT compilation to models for improved efficiency
- Presented project during poster board session and was invited to give a second technical talk

Software Engineering Intern @ Carestream [May 2022 - Aug 2022]
- Developed and maintained C# back-end functionality in Carestream's ImageView X-Ray software
- Gained professional experience with unit testing, agile, git, large codebases, and OO design

Research Software Developer @ RIT [Aug 2022 - Jan 2023]
- Re-hired part-time by faculty to develop software for spatial audio research during final semester
- Independently created a program with a 3D UI for data collection on spatial audio interpretation
- Technologies used include Three.js, Angular, and Typescript

Research Software Developer @ RIT [June 2020 - Aug 2021]
- Independently developed software for cochlear implant research project with RIT & UIowa faculty
- Contains eight listening test modules created using Javascript and the Web Audio API
- Participated in weekly team meetings where software progress was presented
- Data collected from the program was used to produce research publications

Relevant Coursework

ML: Large Scale Machine Learning, Machine Learning Hardware and Systems, Reinforcement Learning, Computer Vision, Natural Language Processing, Machine Learning Theory
Sys: Distributed Systems, Parallel Computing, Computer Architecture, Operating Systems, Networks
Math: Matrix Computations, Probability & Statistics, Algorithms, Graph Theory

Activities

RIT Varsity Track and Field (15-20 hrs / week commitment) [March 2019 - Dec 2022]
Private CS Tutoring

Awards

RIT Presidential Merit Scholarship

Projects

Text-To-Audio Generative Synthesizer
- Adapted Meta's AudioCraft open-source codebase to create a generative text-to-audio synthesizer
- Model is based on MusicGen, a 3.3B parameter autoencoder + autoregressive language model
- Prepared 160GB dataset of audio samples with multilabel and natural language text descriptions
- Analyzed AudioGen and Encodec research papers to guide hyperparameter, data preparation, and data augmentation choices
- Working on deploying model using FastAPI, Docker, and serverless cloud computing
- Plans to implement efficient, genre specific synthesis with low-rank adapters (LoRA)

Distributed Systems Labs & Framework [DSLabs]
- Created a Google spanner-esque distributed key-value store in Java
- Implemented Paxos for replica group consensus, 2PC to achieve atomic commit for distributed transactions, and dynamic load balancing of shards to handle server reconfiguration