Piero F. Orderique

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www.pforderique.com /pforderique

Education

Massachusetts Institute of Technology
MS Computer Science | *Expected: December 2024*
SB Computer Science | *December 2023*

GPA: 4.8/5.0

Club Peru President, Latino Cultural Center Treasurer, Society of Hispanic Professional Engineers (SHPE), Sigma Nu Tech Chair, GTL ML Teacher, AI@MIT

Technical Experience:

→ 6.1040 Software Studio: Teaching Assistant
→ CSAIL UROP: Software Design Researcher
→ 6.101 Fundamentals of Programming: Lab Assistant
→ 18.C06 Linear Algebra: Grader

Relevant Coursework:

Algorithm Design & Analysis, Software Construction, AI/ML, Embedded Systems, Systems Engineering, Graphics, Optimization, Robotic Manipulation, Web Lab, Game Theory, Computer Vision, NLP, EfficientML

Projects (see more at www.pforderique.com/projects)

CNN Model Compression > CV Model
09/2023 Reduced VGG-16 CNN model storage by 75% while still maintaining accuracy by 0.1% after finetuning (Python).

Rent Prediction CNN > Computer Vision Model
05/2023 Designed and implemented a Convolutional Neural Network (CNN) using PyTorch and OpenCV that generates predictions from Google Street View images

OurSpace > Full Stack Website
12/2022 Developed a crowdsourcing solution to service requests for communities using Vue.js, MongoDB, and an express backend with a Google Auth. login system

AI Smart Rockets > Genetic Simulation
03/2022 Developed a genetic algorithm with reinforcement learning techniques to create path finding rockets around user-made obstacles

Instagram & Twitter Bots > Web Scrapers / API
12/2021 Designed an Instagram/Twitter Flask API using Python web scraping (Selenium) for an automated email notification service

Paint Canvas > Android App
06/2020 Published a drawing app (Java) for kids utilizing object-oriented design with a minimalistic UI

Work Experience

Software Engineering Intern *06/2023 - 08/2023*
Google
- Added Natural Language Processing (NLP) layers to the TensorflowJS library including Tokenizers and Transformers
- Automated model creation steps using prompt engineering
- Implemented the first Large Language Model (LLM), GPT2, in the TFJS library based on Keras and research papers
- Designed and implemented algorithms for new tensor ops.

STEP Intern *05/2022 - 08/2022*
Google
- Performed a full stack refactoring (Java, TS) to support a more efficient protocol buffer and message caching system
- Created design docs and educational tech presentations
- Wrote autocomplete components (Angular), reducing the number of invalid options shown to user from ~98% to 0%
- Increased code coverage by 15%+ and fixed 20+ bugs
- Audited internal tools to meet accessibility standards

Machine Learning Engineer *01/2022*
Microsoft
- Proposed a detailed ML architectural design for Intune
- Pre-processed and cleaned client data for training (Python)
- Trained and tuned a classification model with 97% accuracy on Azure ML Studio using standard performance metrics
- Deployed model as a web service (API) for internal use

Robotics Software Intern *06/2021 - 08/2021*
NVIDIA
- Optimized standard ROS2 packages to run faster on NVIDIA hardware using internal APIs rather than OpenCV (C++)
- Reinforced project stability by writing unit and integration tests and benchmarking scripts (Python) in Docker
- Diagnosed and solved synchronization issues by implementing time policy algorithms (C++)

Software Engineer *09/2020 - 05/2021*
MIT Office of Sustainability
- Research helped identify a potential $600M+ worth of damage to university property from flooding simulations
- Designed a Python package for reading and visualizing 300+ specialized data files using SciPy, matplotlib, and NumPy
- Reduced geodata storage by 99.99% (from 1.1TB to ~1MB)

Skills

Programming
C++, Python, TypeScript, Java, JavaScript, SQL, Kusto, Julia, R, HTML/CSS, Assembly

Software & Tools
OpenMP, Git/GitHub/GitLab, MongoDB, Unix

Distinctions

Gates Scholar, President's Volunteer Service Award,
HSF Scholar, MIT 6.UAT Technical Presentation Hall of Fame