Grace (Unnseo) Park

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EDUCATION

Carnegie Mellon University, School of Computer Science Pittsburgh, PA
Master of Science in Computer Science *Expected Graduation: May 2025*
Bachelor of Science in Artificial Intelligence *May 2024*
Coursework: Machine Learning for Healthcare*, Deep Learning Systems*, Intro to Deep Learning, Natural Language Processing, Algorithm Design and Analysis, Product Management, Intro to Machine Learning, Functional Programming

RESEARCH EXPERIENCE

Data Interaction Group, CMU | Research Assistant *Jan 2023 - Current*

- **First Author** of *"How Consistent are Clinicians? Evaluating the Predictability of Sepsis Disease Progression with Dynamics Models"* presented at **ICLR 2024 Workshop** 'Time Series for Health'. (link to paper)
- Designed and trained **transformer**-based models using **PyTorch**, optimizing with hyperparameter tuning.
- Developed experiments to evaluate the feasibility of predicting disease severity changes based on clinician actions using **reinforcement learning** with the MIMIC-IV dataset.

WORK EXPERIENCE

Carnegie Mellon University | Teaching Assistant
11-611: Natural Language Processing *Aug 2024 - Current*
15-210: Parallel and Sequential Data Structures and Algorithms *Aug 2023 - May 2024*

- Led weekly classroom-based recitations, hosted office hours, and managed an online message board.

Red Hat | Software Engineer Intern *May 2023 - Aug 2023*

- Contributed **to large-scale open-source projects** in a collaborative development environment by integrating support for the share-metadata resource in the OpenStackSDK Manila API.
- Developed and implemented comprehensive **unit and functional tests**, improving code reliability and reducing bugs.

Cryptolab | Research Engineer Intern *July 2022 - Aug 2022*

- Implemented **machine learning optimizers** (SGD, Adam, Adagrad) for regression models on homomorphically encrypted data, improving the training speed of regression models by 3.6% and achieved 95% accuracy.

PROJECTS

Kaggle Competitions | Course Project (Intro to Deep Learning)

- Developed a MLP to create a frame-level phonetic transcription of raw Mel Frequency Cepstral Coefficients.
- Created a CNN for recognizing faces in images, ensuring position invariance for face classification.
- Trained attention-based (transformer) models to transduce speech recordings into word sequences.

MyTorch | Course Project (Intro to Deep Learning)

- Built a **custom deep learning library** by implementing components such as Multilayer Perceptron (MLP), Convolutional Neural Network (CNN), Recurrent Neural Network (RNN), and Masked Self-Attention.

Anyways… | Hackathon Project (TartanHacks)

- Designed an algorithm for detecting off-topic sentences using keyword similarity which achieved 90% accuracy.
- Uses real time speech-to-text technology and keyword analysis using the spaCy NLP library.

LEADERSHIP

AI Scholars Summer Program, CMU | Project Leader *Jun 2024 - Jul 2024*

- Led and mentored 6 high school students in designing and executing an ML model achieving 89% accuracy.
- Prepared and delivered project-related lectures, held office hours to address students' questions and needs.

CMU Korean Student Association | Board Member *Sept 2021 - May 2024*

- Planned and organized monthly events to promote Korean culture and history.

SKILLS

Programming Languages: Python, C/C++, SML, R, Java
Technologies: PyTorch, TensorFlow, Pandas, NumPy, Matplotlib, Google Cloud Platform, LaTeX, Git, Vim, Unix