Pavan Seshadri

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Education

Georgia Institute of Technology Atlanta, GA

M.S Music Technology *Aug 2022 – May 2024 (expected)*

- Advisor: Alexander Lerch

Georgia Institute of Technology Atlanta, GA

B.S. in Computer Science, Minor in Music Technology *Aug 2017 – Aug 2021*

- Coursework: Machine Learning (CS 4641), Algorithms Honors (CS 3511), Deep Learning (CS 4803), Robotics and Perception (CS 3630), Computer Graphics (CS 3451), Statistics and Applications (ISYE 3770), Applied Combinatorics (MATH 3012), Recording and Mixing (MUSI 4630)

Selected Publications

Improving Music Performance Assessment with Contrastive Learning

Pavan Seshadri, Alexander Lerch

Proceedings of the International Society for Music Information Retrieval Conference (ISMIR) , 2021

- Contrastive loss based neural networks are able to exceed SoTA performance for automatic music performance assessment (MPA) regression tasks by learning a better clustered latent space.

Work Experience

Amazon Aug 2021 - May 2022

Software Development Engineer, Machine Learning *Seattle, WA*

- Machine Learning Engineer in the Product Knowledge Classification group
- Developed automated systems using AWS services for end-to-end ML lifecycle for product classification NLP models, including data generation, training, and evaluation
- Collaborated with applied scientists on model and data evaluation to discover and solve performance bottlenecks.

Georgia Tech Center For Music Technology Jan 2020 – May 2021

Undergraduate Research Assistant *Atlanta, GA*

- Research on deep learning based methods for automatic music performance assessment (MPA)
- Investigated supervised contrastive learning methods for MPA, which was accepted for publication at ISMIR 2021
- **Advisor:** Alexander Lerch

Amazon May 2020 – Aug 2020

Software Development Engineer Intern *Seattle, WA*

- Designed and built an automatic evaluation feature in a deep neural network training pipeline to support product classification

Projects

Deep Learning (CS 4803) Final Project Mar 2021 – May 2021

- Extended the work of Gururangan et. al, which showed benefits of pre-training NLP models for specific tasks/domains and Pfeiffer et. al, which proposes AdapterHub, a framework for NLP transfomer model compression
- Ran experiments and evaluated using AdapterHub to pre-train RoBERTa on domain and task specific data for text classification

Evaluating Generalization of DNNs for Music Assessment Aug 2020 – Dec 2021

- Investigated the performance of DNN-based music assessment models on similar instruments outside its training set
- Built datasets, trained models, evaluated model performance, and investigated dataset distributions

Technical Skills

Areas: Computer Audition, Natural Language Processing, Deep Learning, Signal Processing, Software Engineering
Languages: Python, Java, C/C++, Bash, MATLAB
Developer Tools: Git, Vim, Docker
Libraries/Frameworks: PyTorch, Amazon Web Services, Pandas, Numpy, Scipy, Matplotlib, librosa, pySpark
Music: Ableton Live, Audacity, Max/MSP

Awards

3rd place @ GT Junior Design Expo Dec 2020

- Worked in a team of 5 to create a central hub application for community news and event planning

President's Undergraduate Research Award Aug 2020

- Awarded funding by GT UROP to conduct research on evaluating the generalizability of DNNs for MPA on instruments outside of its training set in the Fall 2020 semester

Deans List Aug 2018 - May 2020

- Attained Deans List standing for Fall 2018, Spring 2019, and Spring 2020 semesters