Shreya Bali

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EDUCATION

CARNEGIE MELLON
MS in Computer Science(Research)
2021-2022 | Pittsburgh, PA
School of Computer Science

CARNEGIE MELLON
BS in Computer Science
2017-2020 | Pittsburgh, PA
School of Computer Science
University Honors, Dean's List(All semesters)
3.93 / 4.0

COURSEWORK

10-417: Intermediate Deep Learning
15-418: Parallel Computer Architecture and Programming
10-703: Deep RL and Control(PhD)
10-701: Introduction to Machine Learning(PhD)
15-381: AI and Representation
36-401: Modern Regression
36-218: Probability theory for Computer Scientists
15-354: Computational Discrete Math
15-300, 15-400: Research and Innnovation in CS

ACHIEVEMENTS

Member, Mortar Board Honor Society
Best AI Hack, Best Health Hack, Top 10 Team in Pennapps 2018
Top 30 Team, Pennapps 2017
National Winner(India) by Social Innovation Relay, Europe
Governor's State Commendation Award 2015(Punjab)
Youth Leader Runner's up: tGELF 2013, and 2015
Women's Pride Award (Doaba Group of Colleges)

SKILLS

PROGRAMMING
Advanced : Python, C, C++
Intermediate Cuda, OpenMP, Java, SML
Familiar Scala, Android

EXPERIENCE

MULTICOMP LAB | Machine Learning Researcher
Fall, 2019-Fall, 2020 | Pittsburgh, PA

- Conceptualized new algorithms to improve accuracy of state-of-the-art **Audio Source Separation**
- Implemented several baselines on current state of the art algorithms
- Part of the team to develop novel one-of-a-kind Dataset consisting of atomic sounds from diverse sources to better represent real life sounds

CMU PROJECTX TEAM | Machine Learning Researcher
Fall, 2019-Fall, 2020 | Pittsburgh, PA

- Competitively Selected in a team of 6 undergraduates to represent CMU in a machine learning based research competition(ProjectX) hosted by University of Toronto
- Created a novel **graph neural network** based algorithm that improves the **prediction of Peat Fires** in Canada by over 20%
- Constructed several baselines and co-authored a machine learning paper that ranked second in the Natural Disaster Prediction Cateory

DIDEROT | Intern
Spring, 2019, Fall 2019 | Pittsburgh, PA

- Worked for a CMU-based Startup Diderot: an online platform that allows instructors to upload and share their course content.
- Used **natural language processing**(with Spacy) to add implicit links to the text that allows students to refer related concepts easily
- Currently working on finding previously answered questions similar to new questions asked, to reduce the work of instructors

MORGAN STANLEY | Summer Technology Analyst
Summer, 2019 | New York, NY

- Improved the speed of data extraction for the business intelligence unit by converting the sequential execution of queries on single machine to **parallel execution** running on a cluster using **Spark with Scala**.
- Sole contributor to two **Flask-based** side projects that help automating finance category analysis and decreased analysis time from a day to a few minutes

SELECTED PROJECTS

- **Parallel Image Processing Toolbox**
  Implemented several image processing algorithms including Otsu Binarization, K-Nearest Neighbors, Edge Detection in CUDA, and OpenMP
- **Video-Sound Matching**
  Implemented a Pytorch-based project that used Siamese model architecture to match sounds and videos using few samples.
- **Audio Sentiment Analysis using semi-supervised learning**
  Keras base Project that analyzes sentiment analysis using self-training
- **One Instruction Language(OIL) Interpreter**
  Implemented a C-based OIL interpreter, along with several OIL macros