

PARISIMA ABDALI

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Education

New York University, Tandon School of Engineering

New York, USA

Masters of Science in Electrical and Computer Engineering; GPA: 3.4/4

Fall. 2022 - Present

Affiliated with: NYU Video Lab, Rapid Imaging Lab

Imam Khomeini International University

Qazvin, Iran

Bachelor of Science in Electrical Engineering; GPA: 3.84/4 (Ranked 1st)

Fall. 2016 – Summer. 2020

Teaching Experiences ([Link](#))

Technical Skills and Interests

Languages & Development Tools: Python, C/C++, MATLAB, SQL, CUDA, Shell, Jekyll, LATEX.

Data Science & Machine Learning: Pandas, NumPy, Matplotlib, Seaborn, SciPy, OpenCV, Tableau, Scikit-learn, Keras, TensorFlow, PyTorch.

Cloud & Big Data Technologies: Azure, SSMS, Composer, Containers, High-Performance Computing (HPC)

Experience

New York University Langone Health Radiology Department

New York, USA

NTV Intern Research Assistant | MRI Reconstruction - Prof. Li Feng

July. 2023 – Present

- Implemented k-means clustering on tissue-specific data to develop constraint maps, embedded in representational space for pretraining; achieved a significant 55.2% improvement in T1ce and T2-Flair contrast images synthesis.
- Enhanced image synthesis quality and accuracy using TensorFlow's contrastive learning with an encoder-decoder model on the BraTS'21 dataset, leveraging MSE, PSNR, and SSIM for comprehensive evaluation.
- Created a Singularity container and utilized a substantial MRI dataset, necessitating training on a multi-GPU cluster.

IKIU Research Department

Tehran, Iran

Deep Learning Engineer Intern (remotely)

Aug. 2020 – Dec. 2021

- Designed data preprocessing pipeline in MATLAB to format raw audio for machine learning; generated labels for classification tasks and fine-tuned a CNN using MATLAB's Deep Learning Toolbox, achieving 75% accuracy in detecting multiple speakers.
- Integrated YOLOv3 and MonoDepth models, training them on the NYU Depth Dataset using PyTorch and TensorFlow frameworks, which led to achieving 87.3% accuracy in social distancing estimation tasks.
- Achieved 77.5% accuracy in detecting crowded areas using advanced computer vision models on large-scale, real-time video data.

Selected Projects

U.S. STEM Occupations Analysis | Tableau ([Portfolio](#))

Sept. 2023 – Dec. 2023

- Executed comprehensive statistical analysis and data cleaning/preprocessing with Tableau Prep Builder and Pandas in Python, setting a solid foundation for accurate trend analysis.
- Collaborated on cross-functional teams for data integration and quality, enhancing outcomes through teamwork.
- Crafted interactive Tableau dashboards to visualize employment trends in STEM fields, supporting data-driven decisions for stakeholders.

Image Denoising and MRI Reconstruction | Python ([Website](#))

Jan. 2023 – May. 2023

- Developed an advanced algorithm for the denoising of images affected by high-level noise, achieving a 45% improvement in edge detection and detail preservation.
- Applied Compressed Sensing to MRI reconstruction, addressing complex data processing in k-space.
- Developed a novel reference-based Magnitude Subtraction image reconstruction algorithm enhancing temporal and spatial quality of image over 27.6% in PSNR across DCE-MRI brain datasets.

PokéGAN | Python ([Github](#))

Jan. 2023 – May. 2023

- Designed a custom-tuned Generative Adversarial Network (GAN) using the PyTorch framework to generate novel Pokémon images, incorporating data augmentation techniques for enhanced image synthesis quality.
- Enhanced generative model performance by integrating Autoencoders, resulting in high-dimensional pattern recognition in newly generated images — achieving a 21.3% performance improvement over the baseline model.
- Optimized computational resources within distributed systems using HPC, achieving a 68% increase in data processing efficiency.