Aaditya Mehar

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Research Interests

Machine Learning, Computer Vision, Image Segmentation, Semi-supervised Learning, Medical Images, Geospatial Data

Education

- **Sardar Patel Institute of Technology** — Mumbai
  Bachelor of Technology - Information Technology; GPA: 8.74 — *2020 - Present (Expected 2024)*
  Coursework: *Data Structures, Algorithms, Operating Systems, Computer Networks, Database Management Systems, Distributed Systems, Artificial Intelligence & Machine Learning*
- **RN Podar School** — Mumbai
  CBSE Class 12 Boards; Percentage: 94.4 — *2018 - 2020*

Experience

- **Indian Institute of Technology, Bombay** — Mumbai
  Research Intern — *Jan 2023 - Present*
  - Working under Dr. Vikram M. Gadre on the topic Semi-Automatic segmentation of Brain MR Images using Multiresolution & Machine Learning Principles
  - Building networks to carry out automatic skull-stripping & segmenting brain regions
  - Achieved 99%+ accuracy with only 3% the number of parameters in the U-Net on the skull-stripping task
  - Implemented various segmentation models using PyTorch and Tensorflow
- **Sardar Patel Institute of Technology** — Mumbai
  Teaching Assistant — *Sept 2022 - Dec 2022*
  - Conducted remedial lectures in Data Structures for a class of 80 students
  - Assisted in conducting laboratory sessions for a batch of 20 students

Skills

- **Languages** Python, C++, SQL, Java
- **Libraries** PyTorch, TensorFlow, Keras, Pandas, Numpy, Scikit-learn, Django, Flask, OpenCV
- **Tools** Git, MySQL, SQLite, ElasticSearch, Kibana, Google Cloud Platform, LaTeX

Projects

- **Weakly Supervised Segmentation for Flood Detection (Ongoing)**
  - Leading a team of three working to optimize flood detection on the SpaceNet 8 dataset by Maxar
  - Employing Semi-Supervised techniques to alleviate the lack of labeled pre & post-flood image pairs
  - Working with PyTorch & geospatial analysis libraries like OSGeo & Fiona
- **Image-Based Lung Disease Detection: Comparing Swin Transformer & ConvNets (Oct 2022)**
  - Developed a platform that will detect multiple Lung Diseases from a given X-ray image using Swin Transformers
  - Incorporated state of the art technologies & compared two leading frameworks of computer vision
  - Achieved state-of-the-art results in four categories

Achievements

- **GRE Score: 335/340** — *Nov 2022*
  Quant: 170 (96th percentile), Verbal: 165 (95th percentile), Analytical Writing: 4.5
- **Semi-Finalist, Flipkart GRiD 4.0 Information Security Challenge** — *Jul 2022*
  Built an Open Source Package Health Inspector. Was among the top 300 teams out of over 13000 applicants
- **Best Beginner Hack, S.P.I.T. Hackathon** — *Jan 2022*
  Built a personal assistant app with a chatbot & recommended movies, songs, etc, based on user interests
- **Second Runner Up, Product Innovation Challenge by I.E.E.E. S.P.I.T.** — *Oct 2021*
  Ideated an AI-based platform to allow learners from rural areas to skill-up & build complex projects
- **MHT-CET 2020 Score: 99.4 percentile out of over 140,000 aspirants** — *Oct 2020*

Leadership

- **Director General at S.P.I.T. Model United Nations** — Mumbai
  Led a team of 25 people in organizing a MUN conference with 2 committees — *Oct 2021 - Mar 2022*
- **Vice Chairperson at Association of CSE Students S.P.I.T.** — Mumbai
  Conducted online & offline technical & sports events impacting over 300 students — *Jul 2021 - Jun 2022*
- **Finance Head at Industry Relations Cell, S.P.I.T.** — Mumbai
  Managed the expenses & finances of one of the largest committees of the college — *Sept 2021 - Jul 2022*

Certifications

- **Deep Learning Specialization by DeepLearning.ai** — *Sept 2021*
- **Linear Algebra for Machine Learning by Imperial College London** — *Dec 2020*