Aditya Shrivastava

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EDUCATION

INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY
Ahmedabad, IN
BTech in Information Technology | Class of 2021

LINKS

Github:// **imadtyx**
LinkedIn:// **Aditya Shrivastava**
HackerRank:// **adityashrivasta4**
Twitter:// **@iamadtyx**
Pinterest:// **adityashrivastava27**

COURSEWORK

UNDERGRADUATE
Operating Systems
Database Management Systems
Object Oriented Programming
Machine Learning
Theory of Computation

SKILLS

PROGRAMMING
Over 10,000 lines:
Python • C & C++
Over 5000 lines:
Javascript • HTML & CSS • Shell
Over 500 lines:
SQL • Java • SciLab • MatLab
Familiar:
Git • R • LaTeX

TOOLS & SOFTWARES
Visual Studio • Sublime • Github
VirtualBox • VMware • SQLPlus
Sublime/PyCharm • Anaconda
CodeBlocks/Notepad++ • Overleaf
Apache Hadoop • Apache Spark

FRAMEWORKS
Numpy • Scipy • Pandas • Scikit-Learn
• MatplotLib • Tensorflow 2.0 • Keras
• PyTorch • PySpark

EXPERIENCE

INDIAN SPACE RESEARCH ORGANIZATION (ISRO)
Research Intern
June 2020 – July 2020 | Ahmedabad, IN

- Worked on real-time soil classification of Western India using Fully Convolutional Networks (FCN). [Internship was curtailed later on due to the ongoing pandemic.]

RESEARCH

UNDERGRAD RESEARCH ASSISTANT | Nirma University, IN
Jan 2020 – Present| Ahmedabad, IN

- Working under **Prof. Sanjay Garg** and **Prof. Swati Jain** on their project "**Development of Advanced Algorithm for Land Use Land Cover Classification Using Deep Learning Technique**". Exploring the performance of various deep learning models namely, U-Net, SegNet, ICNet and LinkNet on polarimetric SAR and optical image data gained from Sentinel 1 and Sentinel 2A.

UNDERGRAD RESEARCH ASSISTANT | Nirma University, IN
July 2019 – Dec 2019 | Ahmedabad, IN

- Worked under **Prof. Jai Prakash Verma** and **Prof. Sanjay Garg** on their project "**Design and Development of a Scalable Framework for Geospatial/ Geoscience Data Ingestion, Ad-hoc Queries and Analysis in Big Data Environment**". Developed a novel scalable framework as a hybrid of two machine learning algorithms for long-term trajectory prediction and optimized the framework to predict trajectories in realtime.

PUBLICATIONS

AUTHORED

- Aditya Shrivastava. Adma: A flexible loss function for training deep neural networks. *arXiv preprint arXiv:2007.12499*, 2020.
- Aditya Shrivastava, Jai Prakash Verma, Swati Jain, and Sanjay Garg. A deep learning based approach for trajectory estimation using geographically clustered data. *GeoInformatica*, Springer. [Accepted] 2020.

PEER REVIEWED

- Aksha Thakkar, Aditya Shrivastava, and Vipul Chudasama. A dyna-q framework for resource allocation on an online basis. *Lecture Notes in Networks and Systems*, Springer. 2020.

FORTHCOMING

- Aditya Shrivastava, Jai Prakash Verma, Swati Jain, Sang Won Yoon, and Madhuri Bhavsar. A novel prespective on capsule networks for breast cancer imaging. 2021.

CERTIFICATIONS

Design and Analysis of Algorithms, Stanford University
TensorFlow in Practice, Coursera
Deep Learning for Coders, Fast.ai
Machine Learning Microcourse, Kaggle
Applied Data Science with Python, Coursera
Browser Based Models with TensorFlow.js, Coursera

HOBBIES

Playing Guitar.
Reading.
Chess.

INVITED TALKS

WORKSHOP ON IMAGE PROCESSING USING DEEP LEARNING

Guest Speaker | Pandit Deendayal Petroleum University (PDPU)
November 2019

- Was invited by Silver Touch Technologies Ltd. to lecture the bachelor students of PDPU on the topics: Image Classification using Convolutional Neural Networks (CNNs), Multi-label Classification, CNN Regression, Image Segmentation using U-Net architecture and Capsule Networks.

SUMMER SCIENCE PROGRAMME

Instructor | Gujarat Science City
June 2019

- Was invited by Gujarat Council of Science and Technology (GUJCOST) to deliver two lecture series: C++ Programming Language and Computer Game Making Tools to an audience ranging from 12 to 22 years of age at Gujarat Science City.

PERSONAL PROJECTS

ONLINE APPAREL CLASSIFIER

December 2019 - February 2020
Built an online doodle apparel classifier. The deep learning model is trained in real-time with improvements in learning shown to the user.

APPLIED MACHINE LEARNING IN CERN EXPERIMENTS

August 2019 - October 2019
Did a collective of following mini-projects to infer from the data generated at CERN using Machine Learning. Devised simple tracking system similar to that of ATLAS in the final project.

IMAGE SEGMENTATION

June 2019 - July 2019
Image segmentation was performed using U-net architecture on the ADE20K dataset made publicly available by MIT-CSAIL. Highest achieved accuracy was 71.21% (74.32% is state-of-the-art).

BUILT GENERATIVE ADVERSERIAL NETWORKS (GANS)

January 2019 - April 2019
Built a GAN to generate novel artificial celebrity faces. Subsequently, the model was also trained to produce real looking images of yellow leaves.

ACHIEVEMENTS

Was awarded a funding of INR 1,00,000/- by Idea Lab of Institute of Technology, Nirma University to build a partially sentient moving robotic arm for bomb disposal using Deep Reinforcement Learning.