

Rohan Asokan

🌐 web.rohan-asokan.tech 📧 rohanofficial@gmail.com 📱 [ArenaGrenade](#) 📺 [rohan-asokan](#) 📺 [arenagrenade](#)

EDUCATION

B.Tech in Computer Science and Engineering (Hons.)

Hyderabad, India | May 2023

INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY

Cumulative GPA: 8.51

Semester GPA: 9.82

Coursework: Statistical Methods in AI, Digital Image Processing, Machine Learning, Linear Algebra, Probability and Statistics, Data Structures and Algorithms, Computer programming, Database and Systems, Computer Graphics

EXPERIENCE

CVIT @ IIITH | UNDERGRADUATE RESEARCH FELLOW

Hyderabad, India | May 2021 – Present

- Working under **Prof. PJ Narayanan**, researching the area of **computer graphics**, which includes topics such as **NERF**, **inverse rendering**, **View Synthesis**, **Implicit Scene Representation** and others.
- Innovating solutions to problems and testing them using **Compute Clusters**.

PICSNIFF | FULLSTACK FREELANCE - MACHINE LEARNING

Remote | Aug 2021 - Present

- Construction and management of software architecture, using **SDLC Principles**, while leading a team of two.
- Developing an AI-enabled smart photograph culling desktop application, that runs on low-end hardware, with the ability to be user-specific.
- Building an **Electron.js** frontend with **Flask** backend. **OpenCV** for image processing, **PyTorch** for machine learning.

PROJECTS

HAND-WRITTEN DIGIT CLASSIFIER LIVE DEMO

TENSORFLOW-JS, TENSORFLOW, PYTHON, HTML, JS

MODEL ACCURACY: 99.74%

- Trained different **light-weight, high-accuracy** neural networks with convolution layers on the **MNIST** data set and implemented the best performing model as an **in-browser digit** classifier demo.
- The final model uses a standard **dual convolution architecture** and **batch normalization** over the weights.
- Data augmentation was skipped in view of the already high accuracy achieved.

PANDAS DATA-PROCESSING OPTIMIZATION

PYTHON

- Optimized data pre-processing and **feature extraction** for a **large tabular, time-series** data set.
- Over **20 time-series features** were calculated and handled efficiently using different data structures.
- Compared to a simple optimization of using numpy, I was able to achieve a **36x speedup** when using custom **Numba kernels**, dropping the times from **18 minutes** for complete processing to just **27 seconds**.

NEURAL CELLULAR AUTOMATA - IMAGE RECONSTRUCTION

PYTHON, PYTORCH

LPIPS SCORE: 0.009 SSIM SCORE: 0.754

- Implemented a method proposed in the publication Growing Neural Cellular Automata
- The model represents a differentiable update rule for the cellular automata that is represented by image pixels, which gives the image the ability to be self-healing, and can regenerate the whole image from a single pixel.

THE COMPLETE POKÉMON DATASET

PYTHON

- A dataset of images and corresponding names of around 898 Pokémons.
- Images were scraped from Pokedex based on URL route formatting and the corresponding names were acquired from the PokeAPI using a python script.
- The dataset has been made public on Kaggle here for easier access for the machine learning community, and has around 200 downloads.

SKILLS

Languages: Python, C/C++, JavaScript, HTML

ML Frameworks: PyTorch, Tensorflow, Tensorflow-js

Data Handling and Optimization: Matplotlib, Numba
Numpy, Pandas, SQL, CUDA

ACHIEVEMENTS

KDE Academy '21 Speaker

Top 3 CTF'er in college

TEDxYouth Speaker

99th percentile in SAT

Participated in Adobe Analytics Challenge '20