



EXPERIENCE

Deep Learning Intern @ Narola Infotech

07/2021 - Present

The effect of climate change in land cover using multispectral remote-sensing

TensorFlow

- Built image segmentation models of which the best yielded an **IoU metric of 0.86** and used a U-Net architecture.
- Revamped the data preprocessing pipeline for computational efficiency by creating patches of large images.
- Annotated 35 high-resolution satellite images manually for the data collection phase.

Research Assistant @ Mr. Dhaval Vyas

11/2020 - 05/2021

Mapping plant diversity using hyperspectral remote sensing

TensorFlow

- Implementing ASPP into the segmentation model from scratch to obtain multi-scale context information
- Developed numerous deep learning models for comparison and performed hyperparameter tuning
- Performed literature review and wrote reports summarizing the implications of the result.

Research Assistant @ Mr. Nirav Desai

05/2020 - 10/2020

Leaf Disease Classification (Phaseolus vulgaris)

TensorFlow

- Trained a CNN to classify images with **95.05% validation accuracy** via hyperparameter tuning.
- Streamlined preprocessing workflow to incorporate data augmentation, resulting in a balanced classification.
- Gained insights into data imbalance by performing **EDA**, inciting a need to form a strategy for classification.

Backend Developer Intern @ Taxfile InvoSoft Pvt. Ltd.

11/2019 - 04/2020

Developing API and test suites for a Spring-based Java enterprise application

Node.js • Java

- Developed a RESTful API in node.js for a MySQL database and tested using Postman
- Ensured intended functioning of the application by creating unit tests, integration tests, and database tests in Java

EDUCATION

B.Sc. Computer Science (CGPA 8.77/10) @ Veer Narmad South Gujarat University, Surat

06/2018 - 07/2021

12th Grade (CISCE Board - 90.2%) @ SGVP International School, Ahmedabad

07/2013 - 05/2018

PROJECTS

Radiokey

10/2021 - 11/2021

An open-source discord music bot

Node.js • Discord.js

- Developed and administered the creation of the bot that is currently **serving live in 20+ servers across India**.
- Incorporated CI with Github actions to perform code analysis to detect common vulnerabilities automatically.
- Coordinated with **10+ open-source contributors** for the success of this project.

Biomedical Image Segmentation

05/2021 - 06/2021

Application of Deep Learning in medicine image processing

TensorFlow • Flask

- Trained a fully-convolutional network to segment mitochondria in a cell with a 0.81 IoU metric
- The dataset used was provided by EPFL which consisted of 5x5x5µm sections extracted from the CA1 hippocampus region where the resolution of each voxel was approximately 5x5x5nm.

Flamingo: deep learning for art

03/2021 - 06/2021

Final year project (6th semester)

TensorFlow • Flask

- Trained **7 transformer nets** for feedforward fast neural style transfer with instance normalization.
- Trained **3 LSTM models** that given an artist and n seconds, generates an n second music with artist-like features.
- Built a user interface and deployed all models exposed through API endpoints created using Flask.

Cartoon character automation

10/2020 - 02/2021

1st place at Eureka event in Ignite national tech fest 2021, Final year project (5th semester)

TensorFlow • Flask

- Trained a CNN to classify 20 characters from *The Simpsons* with **99.7% validation accuracy without overfitting**.
- Trained an LSTM model to generate new dialogues of n words given a context as sentences.
- Reasoned the insights found when visualizing feature maps and model architecture in Tensorboard

LANGUAGES / TECHNICAL SKILLS

- Languages: Python, JavaScript, Java, C++
- Libraries and Frameworks: TensorFlow, Sci-kit learn, NumPy, Spring Boot,
- JavaScript ecosystem: Node.js, React.js, Gatsby.js, Angular.js
- Design Tools: Figma, Adobe XD

CERTIFICATIONS

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| • <u>DeepLearning.ai TensorFlow Developer Professional Certificate on Coursera</u> | 01/2021 - Present |
| • <u>M001: MongoDB Basics from MongoDB University</u> | 08/2021 - 09/2021 |
| • <u>Introduction to Quantum Computing from Qubit by Qubit sponsored by IBM Quantum</u> | 08/2020 - 05/2021 |
| • <u>Stanford's Online Machine Learning course by Andrew Ng on Coursera</u> | 08/2020 - 10/2020 |
| • <u>43-hour Complete machine learning and data science: zero to mastery</u> | 05/2020 - 08/2020 |
| • <u>MATLAB Onramp by Mathworks</u> | 05/2020 - 06/2020 |

AWARDS / ACHIEVEMENTS / COMMUNITY

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| • Entitled 1st Rank in B.Sc. Computer Science at Veer Narmad South Gujarat University | 07/2021 |
| • National Techfests: Ignite 2021 at CMPICA, Changa | 03/2021 |
| • Achieved 1st rank in Eureka, a project expo event as a single participant out of 15 teams of two with a practical demonstration of my final year project - 1 (cartoon character automation). | |
| • Secured 2nd place in Business Plan event at Ignite 2021 out of 15 teams by pitching a GUI software to build deep learning models and train it directly on the cloud with a click for education | |
| • Hackathons | 04/2020 |
| • Achieved a top-tier category score in 24-hour Data Science Hackathon out of 35 participants at CHARUSAT University organized by IEEE DEPSTAR Student Branch. | |
| • Open source contributions | |
| • Radiokey (creator) | |
| • Contributed user login and recommendation workflow for a movie recommendaton system | |
| • Assisted freecodecamp in migration to TypeScript | |
| • Others | |
| • Received "Devkiben & Vaikunthlal Parikh Endowment" scholarship based on my merits in 4th semester. | |
| • Participated in the official Guinness world record attempt for "the most users to take an online computer programming lesson in 24 hours" achieved by Guvi Geek Network Private Limited | |
| • Raised INR 35,000 in fundraising event for Kerala Flood Victims | |
| • Represented the north-west region of ASISC India for inter-state swimming competition in 2017. | |