Rushil Venkateswar

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B.Tech. + M.Tech. - Computer Science and Engineering
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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. + M.Tech.	Indian Institute of Technology, Kharagpur	8.79 (Current)	2020-Present
Senior Secondary	Little Flower School, ISC Board	96.25%	2020
Secondary	Little Flower School, ICSE Board	95.40%	2018

EXPERIENCE

- **Research Intern | Dr. Debasish Chakraborty, ISRO** *Apr. 2022 - Dec. 2022*
  Semantic Segmentation of Remote Sensing Images ⊙ Kharagpur, India
  – Studied existing literature on CNNs, deep learning and their usage in the remote sensing context.
  – Built a U-Net based model with Depth-wise Separable Convolutional layers which dramatically reduce the number of parameters and computation needed to obtain similar performance as a U-Net on LandCover.AI dataset.
  – Scripts to perform inference on variable sized images from Google Earth were created.

- **Research Intern | Prof. Partha Pratim Das, IIT Kharagpur** *May. 2022 - Jul. 2022*
  Development of a Python Tutor Kharagpur, India
  – Aided the development of a Python Ontology using **OWLReady2** and **Protégé**.
  – Evaluated the validity of Python Onotology by implementing **n-gram matching** and **fuzzy matching** of onotology keywords with Code Intents available through Conala Corpus.
  – Implemented **Frequent Itemset Mining** for Neural Query Expansion to be fed into a transformer architecture model for creating code snippets from corresponding code intents.

PROJECTS

- **Hospital Management System (CS39202: Database Management Systems Lab)** *Feb. 2023 - Mar. 2023*
  Keywords: Python Flask, Bootstrap ⊙
  – Web application developed using **Python Flask** with support for user authentication, suitable access control, data security & automated email scheduling. Frontend implemented using **Bootstrap** & **Jinja** templates for form control.
  – Support for variety of users such as Front Desk Operators (handle patient registration), Data Entry Operators (insert patient data), Doctors (upload patient diagnosis), and Admins (user management).

- **The Chandrayaan Moon Mapping Challenge (ISRO, Inter IIT Tech Meet 11.0)** *Jan. 2023 - Feb. 2023*
  Keywords: PyTorch, Convolutional Neural Networks, Generative Adversarial Networks ⊙
  – Created a Lunar T-GAN Model with modified discriminators which focus on regions of interest like craters & hills.
  – Also worked on extraction of overlapping data between TMC-2 and OHRC images to be fed into pipeline of Real-ESRGAN & HAT combined with other sharpening and denoising algorithms.

TECHNICAL SKILLS

- **Programming**: Python, C/C++, Bash Scripting, Verilog
- **Tools/Frameworks**: Keras, Tensorflow, Pytorch, Tkinter ** Elementary proficiency*

COURSEWORK

- **Computer Science**: Programming & Data Structures, Algorithms-I, Algorithms-II, Software Engineering, Systems Programming, Compilers, Computer Organisation & Architecture, DBMS, Machine Learning
- **Mathematics**: Linear Algebra, Calculus, Discrete Structures, Probability & Statistics, Statistical Inference
- **MOOCs**: Machine Learning **(Andrew Ng)**, Deep Learning Specialization **(DeepLearning.AI)**

POSITIONS OF RESPONSIBILITY

- **Associate Member**, Business Club, IIT Kharagpur *Dec. 2020 - Sep. 2021*
  – Authored a **Whitepaper on XGBoost** ❖.
  – Conducted a webinar on Cryptocurrency with Dr. Akshat Shrivastava as the guest lecturer.

ACHIEVEMENTS

- **Solo Gold Medal**, Inter IIT Tech Meet 11.0 - IIT Kanpur, Kanpur *Feb. 2023*
- **All India Rank 473**, JEE Advanced - conducted by IIT Delhi, Jamshedpur *Sep. 2020*
- **All India Rank 1176**, JEE Mains - conducted by NTA, Jamshedpur *Jan. 2020*

VOLUNTEER EXPERIENCE

- **SWG Mentor**, Students' Welfare Group, IIT Kharagpur, Kharagpur *Dec. 2022 - Present*