VENKATA LAHARI BALANTRAPU

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EXPERIENCE

Institute of Metabolism and System Research, University of Birmingham-Research Associate
November 2021 - current
Birmingham, UK

- Implement a novel deep learning model to perform the classification of Chron's disease from capsule endoscopy images.
- Collect big data sets and organize them for building accurate models.
- Arrange meetings and provide ready access to all data for faculty researchers or principal investigators as needed.
- Assist in patient engagement events to attain feedback on the ongoing research as well as help them understand the applications of Artificial Intelligence.

Gendoo Lab, Center of Computational Biology, University of Birmingham-Research Intern
June 2021 - August 2021
Birmingham, UK

- Received, cleaned, and prepped datasets of high dimensions SQL, and Excel to help other research interns build mixed models.
- Systemized web scraping of data and minimized the data collection timeline by 40%.
- Evaluated models for the analysis of xenografts, organoids, and patient RNASeq of cancer cells.
- Programmed the system using R and the Bioconductor package.

University of Birmingham-Student Representative
November 2020 - September 2021
Birmingham, UK

- Formulated creative ideas in staff forum meetings and effectively communicated student feedback.
- Devised solutions to problems raised by the students to better facilitate the change in course structure and timeline.
- Mediated between staff and students regarding Class Health and safety, facilities, and student welfare needs.

University of Birmingham-Student Ambassador
November 2020 - September 2021
Birmingham, UK

- Interacted with university and prospective students and parents during tours and student visit days, answering questions and providing insight.
- Answered questions, pointed out important features, and offered suggestions about the prerequisites of the course.
- Guided students with accessing the various program and institutional resources.

PROJECTS

Segmentation of Covid -19 CT-Scans

- Created a Deep Residual Segmentation network (DRSeg-UNet) for the accurate segmentation of the Covid-19 lesions from the CT-Scans. Achieved an increase of 15% in the IoU score (0.96) than pre-existing models. DRSeg-UNet is robust and maximizes the performance with utmost sensitivity on limited data.

Skin Cancer Prediction

- Programmed machine learning for the multi class-classification of skin cancer from a dataset of 10,000 images. Classified the images into non-cancerous, severe, mild, moderate with the guidance of an expert. Trained a support vector machine on the data.
- Utilized the concepts of image analysis to extract features from the images. The model achieved an accuracy of 92%.

Semantic Segmentation of MR images

- Modeled a U-Net-based architecture to segment MR images of hearts into four sections.
- Conducted experiments to optimize the hyperparameters of the network and compare different architectures.

University Admission Prediction

- Built linear regression model and evaluated with different optimization techniques without the inbuilt functions to predict the admission of a student based on several categories such as IELTS, CGPA, SOP, etc.

Backpropagation and SoftMax on Fashion Minst

- Classified the fashion MINST data set by using the concepts of Backpropagation and SoftMax without inbuilt functions. Experimented with the model to attain the optimal hyperparameters.

EDUCATION

University of Birmingham- MSc, Artificial Intelligence, and Machine Learning
September 2020 - September 2021; Distinction
Birmingham, UK

- **Relevant courses:** Neural Computation, Mathematical Foundations of AI and ML, Computer Vision, Visualization, Machine learning, and Intelligent Data Analysis.

Jawaharlal Nehru Technological University- B.Tech, Computer Science and Engineering
June 2016 - May 2020; CGPA: 7.9
Kakinada, India

- **Relevant courses:** C; C++; Java; Python; HTML; Database Management System; SQL; Machine Learning; Algorithms and Data Structures; Data Mining; R.

SKILLS

Languages:

- English (Proficient).
- Telugu (Native).
- Hindi (Proficient).

Skills:

- Python, C, SQL, HTML, R, Java, C++.
- MATLAB, OpenCV, Scikit-learn, Jupyter, TensorFlow, Keras, Pandas, Numpy, Seaborn.
- Data Analytics, Machine Learning, Deep Learning, Statistics, Data Visualisation, Image analysis.
- Communication, Teamwork.