YASHASWINI | 20EE30032

ELECT.ENGG. Dual degree in any spl.(M.Tech Dual 5Y)
MINOR in COMPUTER SCIENCE & ENGG. (B.Tech 4Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2025	M.TECH Dual Degree 5Y	IIT Kharagpur	8.53 / 10
2019	Senior School Certificate Examination	CBSE	92%
2017	Secondary School Examination	CBSE	10 / 10

INTERNSHIPS

Deep Learning Research Intern at Griffith University, Supervisor: Prof. Belinda Schwerin | TensorFlow

•Developed a solution for continuous monitoring of fetal well-being using Residual Convolutional Autoencoder architecture to separate fetal ECG signal from abdominal ECG signal.
•Applied Wavelet Transform for removing baseline wander from abdominal ECG signal and Pan-Tompkins algorithm for R-peak detection
•Trained the model using synthetic data, real data from PCDB and ADFECGDB, from Physionet. Tested the model on real data.
• PCDB: Sensitivity 90.05, Recall 96.9, F1-score 93.3 ADFECGDB: Sensitivity 94.39, Recall 92.18, F1-score 93.24

PROJECTS

Audio classification using deep learning: Kaggle | PyTorch, TorchAudio

•Developed a model for environmental sound classification using CNN and log mel spectrograms of sound waves on UrbanSounds dataset.
•Batch normalization, learning rate scheduling and Kaiming weight initialization were used to improve the model.
•The test set accuracy of the model was 86%.

Neural Style Transfer on Image | PyTorch, Transfer Learning

• Implemented Neural Style Transfer using VGG19 pre-trained CNN to generate a stylized version of the content image.
• Investigated the effect of using different content and style feature map layers, as well as the style gain factor.

Semantic similarity on Quora question pairs dataset: Kaggle | Sklearn, Sentence Transformer, PyTorch

• Predicted semantic similarity of question pairs using BoW and TFIDF features.
• Trained Random forest and XGBoost classifier using these features.
•Also used Sentence Transformer + XGBoost for predicting semantic similarity of question pairs.
• The best F1 score of 0.85 was achieved using Sentence Transformer + XGBoost classifier.

APPL stock price prediction using Statistical and Deep Learning techniques for Time Series Modelling: Kaggle | TensorFlow

• Predicted APPL closing stock price data using ARIMA and Stacked LSTM models on Kaggle datasets.
• ARIMA (0,1,3): MSE 0.016, MAE 0.1, Stacked LSTM: MSE 0.00047, MAE 0.01

Neural Encoding and Decoding of Spike Statistics: Computational Neuroscience, IIT Kharagpur

• Analysed spike times of 4 neurons in an auditory area of the brain, in response to a white noise stimulus.
• Identified the features of the stimulus encoded by each neuron by analysing their spike-triggered average.

Grass lane detection using Computer Vision | OpenCV, Python

• Developed a method to automatically segment white chalked lines on grass from video input.
• Performed image segmentation in HSV colorspace using masking and morphological operations.
• Differentiated between white stripes on orange obstacles and grass lanes by fixing upper/lower HSV boundaries

SKILLS AND EXPERTISE

• Deep/Machine Learning, Reinforcement Learning, Natural Language Processing, Computational Neuroscience
• C/C++, MATLAB, Python, SQL, PyTorch, TensorFlow, Keras, NumPy, pandas, scikit-learn, OpenCV

COMPETITION/CONFERENCE

• Outstanding performance in Electronica Circuit Design Competition conducted by IIT Gandhinagar
• Developed the V Sense Gloves for the Product Design competition at IIT Kharagpur. I developed the product using colour sensors, a sewable Arduino circuit that I programmed to control the intensity and frequency of vibration generated by micro-motors. Our team, Anveshak, won the 2nd prize in the competition.

AWARDS AND ACHIEVEMENTS

•Awarded Google Generation Scholarship 2021: 70 applicants selected from 25 countries in the APAC region
• Awarded full scholarship at Chennai Mathematical Institute: B.Sc. Mathematics &Computer Science

COURSEWORK INFORMATION

• Artificial Intelligence, Algorithmic Game Theory, Programming and Data Structures, Information Theory and Coding
• Neuromatch Academy: Deep Learning track. My project was on Modelling Risky Choice Behaviour using Reinforcement Learning.
• Computational Neuroscience, Neuronal Coding of Sensory Information, Linear Algebra, Calculus, Probability and Statistics
• Signal Processing, Computer Architecture and Operating Systems, Embedded Systems

EXTRA CURRICULAR ACTIVITIES

• Gopali Youth Welfare Society: Taught underprivileged students and organized online educational workshops
• Golden Ratio Association of Mathematics: Combinatorics problem solving lecture series on YouTube
• Medium articles: Optimization in Deep Learning, Single Neuron Models
• Won the first prize in Inter-Hall Table Tennis competiton at IIT Kharagpur