

GOKULAPRIYAN BALAJI

Contact No: +91-9677092869; Email ID:gokulapriyan9677@gmail.com

ACADEMIC QUALIFICATION

Bachelor of Technology, (Electronics & Communication Engineering with Specialization in Design & Manufacturing) + Master of Technology (VLSI & Electronic System Design), Indian Institute of Information Technology, Design and Manufacturing (IITDM), Kancheepuram, C.G.P.A: 9.27, July 2018 - May 2023

INTERSHIPS

Machine Learning Engineer, July 2023 - October 2023

Advanced Machine Learning Intern, January 2023 - June 2023

Machine Learning Intern, May 2022 - December 2022, Quantrium Tech Private Limited, Chennai

- Worked on a project on table recognition and processing of Balance Sheet & Profit and loss statements
- Created an API using AWS services, Flask and MongoDB database
- Studied various formats of business statements shared by clients and supported them by genializing solution
- Worked on a project on creating analysis of bank statement
- Studied bank statement formats of Indian and International Banks which helped in clear problem understanding
- Improved the accuracy of extraction of information from bank statements to 96%
- Implemented post-processing of to improve entity recognition in transactions

Machine Learning Intern, Blinklabs Electronics Private Limited, Bengaluru, May 2021 - October 2021

- Worked on a project on Face Anti-Spoofing in the computer vision domain
- Studied various attacks that fool face recognition systems which helped in build the foundation
- Took up data-centric Artificial Intelligence (AI) approach to solve the anti-spoofing problem
- Implemented a deep learning model incorporating RPPG signals of frames and achieved very high accuracy
- Studied and worked on alternative models like to tackle unknown spoof attacks without being explicitly trained

Machine Learning Research Intern, Indian Institute of Technology (IIT), Patna, July - December 2022

- Worked on a project on hate speech detection in the natural language processing domain
- Conducted performance study of different multi-task models considering hate speech detection from individual datasets as separate tasks
- Studied the effect of using different combinations of existing datasets in the performance of multitask settings
- Carried out performance comparisons between developed multitask models against single task models and a single classification model trained on a merged dataset

Machine Learning Research Intern, Indian Institute of Technology (IIT), Kanpur, May - July 2022

- Worked on a project on Audio Search using natural language queries
- Studied the effects of single-modality vs multi-modality with respect to the performance which helped in defining the approach
- Administered performance analysis on feature extractors of text and speech modalities which led to best choice of extractors
- Implemented a baseline model at par with results of state-of-the-art models which led to strong baseline

ACADEMIC PROJECTS

Title: Beer Blurrer

Duration: March-May 2021

Team Size: 4

Summary: Automated blurring of alcoholic content using YOLO-V4 and image segmentation, achieving a MAP score of 99.19%. Optimized and deployed the model using Streamlit while achieving a processing speed of ~ 0.75 sec per image.

Title: Custom OCR on ISO Certificates

Duration: January-March 2021

Team Size: 1

Summary: Performed custom data collection from Google images, preprocessing using OpenCV, augmentation using Albumentations and annotation of images using LabelImg. Achieved detection of regions of interest using Yolo-V3, text recognition using tesseract and recording the outputs to a CSV file.

Title: Automatic Image Captioning

Duration: December 2020-January 2021

Team Size: 1

Summary: Implemented an Encoder-Decoder pipeline to generate captions for images fed into the ML model. Leveraged Inception V3 Encoder model with the help of transfer learning & LSTM Decoder model along with image embedding to implement the complete model.

Title: Adaptive Traffic Control System

Duration: January 2020-March 2021

Team Size: 3

Summary: Conducted research for building an adaptive traffic control system using the data collected from traffic signal systems. Signal timings were decided upon the output of a machine learning model by taking in data collected from piezoelectric strips embedded in the road. The TinyML concept of porting a machine learning model onto an embedded system board was the driving idea behind the project.

PAPER PRESENTATION AND PUBLICATION

Maity, Krishanu & Balaji, Gokulapriyan & Saha, Sriparna. (2023), Towards Analyzing the Efficacy of Multi-task Learning in Hate Speech Detection. Neural Information Processing. ICONIP 2023. Lecture Notes in Computer Science, vol 14452. Springer, Singapore.

A.Navaas Roshan, B.Gokulapriyan, C.Siddarth, Priyanka Kokil,' Adaptive Traffic Control with TinyML' presented in 2021 Sixth International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), Chennai 2021

TECHNICAL SKILLS

- Programming Languages: C, C++, Matlab, Python
- Frameworks & Tools: Pytorch, Tensor Flow, Keras, Matplotlib, NumPy, Scikit-Learn, Pandas, OpenCV, Git, Latex, Google Cloud Vision, AWS Textract, MongoDB, Flask