DHARNEESHKAR JAYAPRAKASH

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EDUCATION

Virginia Tech, Blacksburg, VA **May 2023**
Master's in Computer Engineering *GPA 3.96/4.0*

Amrita Vishwa Vidyapeetham, Coimbatore, India **June 2020**
Bachelor of Technology in Electronics and Communication Engineering *GPA 3.60/4.0*

Coursework: Computer Vision, Data Analytics, Data Structures and Algorithms, Advanced Machine Learning, Deep Learning.

TECHNICAL SKILLS

Programming : Python, C, C++, JavaScript, SQL.
Tools & Technologies : TensorFlow, PyTorch, Scikit-learn, Pandas, Tableau, OpenCV, NumPy, Jupyter, Docker, Git, AWS.
Web Technologies : Node.js, Angular, HTML, CSS, Redis, Web3, JQuery, Rest API, Bootstrap, DevExtreme.
Certifications: : Deep Learning Specialization (by deeplearning.ai), Machine Learning (by Stanford).

PROFESSIONAL EXPERIENCE

American Century Investments, Kansas City, MO **May 2022 – July 2022**
Intern

- Automated the Digitalization of bank checks (>40000 checks per year). Leveraged processing time (manual processing takes 3.5 business days) and resources.
- Developed an Optical Character Recognition(OCR) based application to extract data from check images using Amazon Textract.
- Applied Natural Language Processing (NLP) for extracting sentiment, importance, and keywords on the customer call log transcripts to yield valuable business insights.
- Developed text clustering using an unsupervised Self Organizing Map neural model. Performed stop word removal, lemmatization and TF-IDF vectorization.

Tata Consultancy Services, Chennai, India **August 2020 – June 2021**
Systems Engineer | Full-Stack Development

- Transformed desktop application into web-based application based on microservices architecture and containers.
- Collaborated with a group of 10 developers to design, develop, deploy and test code for an in-house web application used by 600+ users in the client's internal team to track products quality defects.

PROJECTS

Segment, Summarize and Classify: Electronic Theses and Dissertations (ETDs) **August 2022 – December 2022**

- Designed and developed an end-to-end system to segment 5000 ETDs into chapters. Summarized and classified the segmented chapters using language models.
- Integrated the system with React front-end and PostgreSQL database. Set up CI/CD pipelines and containerized the application by creating Docker images.

Text-to-Image Generation **February 2022 – May 2022**

- Generated high quality realistic images from the given text description using GAN-based deep learning models namely: DF-GAN, ManiGAN, and lightweight ManiGAN.
- Evaluated based on Inception Score (IS) and Frechet Inception Distance (FID). The lightweight ManiGAN has the best score (10.263) and also uses least number of parameters (-40%).

Real-time face mask detection system **May 2020 – September 2020**

- Automated a real-time face mask detection system using OpenCV and CNN based deep learning algorithms such as VGG, ResNet, Inception and DenseNet.
- Achieved best Average Precision (AP) of 91% from the Densenet-201 model, followed by 90.45% from the Inceptionv3 model.
- Optimized Neural Network's training speed by GPU parallelization using CUDA and achieved a 10 times reduction in training time.

Detection of Potholes and Pedestrians **July 2019 – March 2020**

- Created a new 1500 image dataset for potholes in Indian roads from scratch.
- Implemented end-to-end Deep Learning methods such as YOLO, Faster-RCNN and SSD to detect potholes and pedestrians.
- Increased mean Average Precision (mAP) from 50% to 76.4% by employing data augmentation and hyper-parameter tuning.