# Ramki R.

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## EDUCATION

**Masters in Intelligent Systems Engineering** Jan – Dec 2023.
Indiana University, Bloomington, United States. GPA - 3.81/4.0.

Relevant Coursework: Machine Learning in Signal Processing, Computer Vision, Deep Learning Systems, Graph Analytics, Elements of AI, Applied Machine Learning, Autonomous Robotics.

**Bachelor of Engineering in Electrical & Electronics** Aug – Jul 2017
SSN college of Engineering, Chennai, India. GPA - 3.2 /4.0.

## TECHNICAL SKILLS

**Language & Database:** Python, Java, JavaScript, MongoDB, PGSQL, MySQL.
**Web Technology**: Angular, Node.js, Ajax, REST, HTML, XML, CSS, GraphQL.
**Frameworks:** Spring MVC, Spring Boot, Django, Tableau, Kafka.
**ML Libraries:** NumPy, Pandas, scikit-learn, Matplotlib, NLTK, Spacy, transformers, tensor-flow, Pytorch.

## EXPERIENCE

**Virtusa Consulting**, Backend Developer Apr 2020 – Jul 2021

- Designed and developed backend web application using Python, Django, MySQL to perform real-time data processing through kafka for three different regional hostings (North America, Europe, and Asia).
- Implemented various microservices development from quote processing to money deal booking and confirmation. created stored procedures and schedulers for processing the booked trades at the end of day and accessed api connections from OLT API to get the live rates of currency for conversion in the money market.
- Used Git, JIRA, SSH and Docker CI/CD for application deployment. Written shell scripts for job automation.

**Renault-Nissan-Mitsubishi,** Full Stack Developer Jul 2017 – Mar 2020

- Applied Java, Spring-Boot, Angular, PGSQL and MongoDB to create REST API's and built data-driven web applications.
- Implemented real-time chat with node.js and socket.io to establish a bidirectional communication channel between client and server. Optimized PGSQL queries by views & procedures for ChartJs Dashboard
- Developed Front End Screens using Angular Framework and design implemented with CSS & Bootstrap 5. Integrated Backend development with Spring Boot Web Services.
- Incorporated Object-Oriented design and implemented Web services and micro services for workflow process management and productivity maintenance applications.
- Worked on CI/CD tools like Jenkins and Docker Containerization for integration and deployment of services in production environment. Involved in cross-team collaboration for design, development, unit testing and production deployment.

## PROJECTS

**Accent Style Transfer using Cycle-GAN and Automatic Speech Transcription using Wav2Vec2** Nov – Dec 2022.

- Transferred heavy accented speech into conventional regular accent using Cycle-GAN-VC2 for Dr-Vctk dataset and finetuned on the dataset using pretrained DeepSpeech2 and Wav2Vec2 model with CTCBeamDecoder in Pytorch to reduce the Word Error Rate to 0.04.

**Disaster Tweets Classification with Distil BERT Model** May – June 2022.

- Vectorized data from the twitter tweets dataset into word tokens with the distil-Bert-tokenizer and fine-tuned the pretrained distil-Bert model from transformers library to predict emotion/sentiments and classified disaster tweets from normal tweets with Accuracy of 0.8321 and Precision of 0.82.

**Machine Translation using Vanilla Transformer Model from French to English** May – July 2022.

- Tokenized and extracted features from the French-English text files of euro-parliament data using Pytorch Dataset Library & implemented a transformer model with multi-head attention from scratch to design a machine translator from French to English with an Accuracy of more than 72%.

**Predicting Molecular properties using Graph Neural Networks** Mar – May 2022.

- Preprocessed molecular data by Rdkit library for Tox21 dataset and created embeddings by MPNN, GCN, GAT, Graph Sage from torch-geometric library and predicted molecular properties like solubility, toxicity etc., using RandomForest, Xg-Boost classifier from scikit-learn with an accuracy of 82%.

**Object Detection on Low Light Images with SSD/Retina Net** Nov – Dec 2021.

- Developed a Torch data loader for low light images from the Ex-Dark dataset and enhanced image contrast using mir-net. Augmented images using Albumentations library, detected objects with a mAP score of 43.2 with SSD/Retina Net.