

# RAJARAM SIVARAMAKRISHNAN

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A data-driven Developer, proficient in Python with a problem-solving mindset, an analytical approach to tasks and strong knowledge of Computer Vision and Natural Language Processing. Interested in learning and implementing latest solutions that solve problems and create impactful end-user experiences.

## EXPERIENCE

### **RTI INTERNATIONAL | DURHAM, NC**

#### **Azure Data Engineer**

MAY 2023 – SEP 2023

- Worked on development & modification of Data Warehouse Integrations, data models that leverage Azure Synapse Pipelines and Data Lake for storing snapshots of the data everyday.
- Implemented and maintained relational databases with more than 1 million rows for various internal data sources while migrating from on-prem solution to Cloud (Azure based service).
- Developed customized data pipelines in azure to bring databases from various integration services (such as Salesforce, Sharepoint list) into Azure Synapse and serve for reporting purposes.
- Integrated parameterized Synapse pipelines to run in an automated manner reducing time by days for integrating new services that can reuse the same pipeline (consisting of scheduled triggers and customized Linked services)

### **RTI INTERNATIONAL | DURHAM, NC**

#### **AI Developer 2**

JULY 2020 - MARCH 2023

- Developed a multimodal sentiment analysis platform that collects and recognizes emotions using custom-built AI models for Facial, Natural Language Processing, and Human Vocal Sentiment Analysis to help with interview assessments and create metrics for each unique user.
- Built a platform that records and analyzes users cognitive and emotional states in a non-invasive manner by utilizing Face identification on raw thermal camera photos to measure cognitive load. The entire platform ran on a Raspberry pi and a web interface was provided for visualizing the results.
- Developed an automated end-to-end platform for recognizing the count and dwell time of individuals visiting public spaces using customized computer vision models on camera sources, as well as a web-based UI for displaying outputs and generating reports.

## TECHNICAL PROJECTS

### **Facial Emotion Recognition [ViT]**

NOV 2021

- Finetuned Vision Transformer model to perform Facial Emotion recognition on images and videos using the pre-trained model provided by Google AI. Collected data from multiple sources and re-trained the model on Azure Virtual Machine. The model on average gets downloaded 1000 times a month (on hugging face)
- Model can be found at (<https://huggingface.co/Rajaram1996/FacialEmoRecog>)

### **Audio Emotion Classification [HuBert]**

NOV 2021

- Finetuned HuBert model from Facebook AI Research to analyze Human Vocal Sentiment in audio clips extracted from videos. Data was collected and preprocessed to featurize pitch data, Mel-frequency cepstral coefficients etc. This model was downloaded 23000 times last month.
- Model can be found at ([https://huggingface.co/Rajaram1996/Hubert\\_emotion](https://huggingface.co/Rajaram1996/Hubert_emotion)).

## EDUCATION

### **North Carolina State University, Raleigh, NC**

AUG 2018 – MAY 2020

- Master of Science in Electrical Engineering; GPA: 3.59/4.0
- Coursework: Signal Processing, Digital Imaging Systems, Probability and Random Process, Computer Vision, Neural Networks, IOT Analytics.

## ADDITIONAL

- **Certifications & Training:** Google Cloud Platform Machine Learning Fundamentals, Data Science Math Skills from Coursera.
- **Hackathon:** Awarded the third best solution of the Cohere AI Hackathon that took place on August 19-21, 2022. Project can be found at (<https://github.com/krrish-v/bookmark-collector>)
- **Community Challenge:** Built second best model for Low resource Language ASR for Hugging Face using Wav2vec2 XLSR model. (<https://huggingface.co/Rajaram1996/wav2vec2-large-xlsr-53-tamil>)

## TECHNICAL SKILLS

Programming languages: Python, SQL

Software frameworks/tools: Azure Services (including Azure Synapse pipeline, Azure Data Lake Storage, Azure Data Science Virtual Machine), Microsoft SQL Server, Linux, Docker, Transformers, Git, GitHub, GitLab, CircleCI