

# Karthik Raja Anandan

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## Personal Profile

As an adept programmer, my expertise lies in competitive programming and machine learning, fostering a strong foundation in data analysis and precise model selection. Specializing in computer vision and natural language processing, I am intrigued by pioneering techniques such as few-shot learning and meta-learning to elevate NLP applications. Proven by my high rankings in ML competitions like Imageclef and Hasoc, I continuously explore cutting-edge methods. My focus on multilingual sentiment analysis showcases the power of few-shot learning for crafting efficient and accurate models. Combining programming, machine learning, and NLP skills with a fervor for innovation, I am a valuable asset to any team, as reflected in my portfolio.

## Projects and Hackathon

### National Institute of Siddha – Ministry of AYUSH(GoI), AIIMS Jodhpur

Siddha Expert System

Sep-Nov 2022

- Analyzed Siddha prognosis transcripts written in the Tamil regional language
- Built an expert system to perform a nine-way classification of Siddha diseases [Code](#)
- **Technical Skills:** Data-collection, NLP, Bootstrap, jQuery, Flask

### Personal Expense Tracker

IBM Nalaiyathiran

Aug-Nov 2022

- Built a cloud system for expense analytics
- Added CI/CD with github actions [Code](#)
- **Technical Skills:** IBM Cloud, Docker, Kubernetes, CI/CD, Flask, Jira

### Funded Project Tracking system

SSN project

Mar-Jun 2022

- Built a portal for teachers and students to efficiently track and manage inventory resources
- Used for re-use of inventory resources [Code](#)
- **Technical Skills:** Node.js, Tailwind, Next.js, React.js, MongoDB

### Non-residential Builtup Area classification from medium resolution satellite

Chennai, India

India Meteorological Department (IMD), Ministry of Earth Sciences (MoES). (part of Smart India Hackathon )

Oct 2022

- street detection and residential area detection
- Used contour detection techniques
- used unsupervised segmentation model U-Net
- **Technical Skills:** Python, Tensorflow

### Person Reld in a large scale system

SSN College of Engineering

Sep 2022 - Dec 2022

- Analysed data from various person Reld resources
- **Technical Skills:** EdgeComputing, Tf models, Reld models, distance metrics

### Agile Team Project Staffing– Industry Project

📄 Paper

Feb - July 2022

- Researched on methods to generate an optimal project staffing using machine learning and developed a web application to get user input and generate agile teams
- Introduced the concepts of a responsibility matrix, and probability impact to quantify the requirements for different classes of software engineers [Code](#)
- **Technical Skills:** Bootstrap, Flask, Decision-tree Regressor

## Research Papers

### Multilingual sentimental Analysis using Few-shot learning

Chennai, India

📄 Paper

Oct 2022 - June 2023

- Exploring state of the art Natural language models for embedding layer generation
- Detailed analysis of Meta learning techniques available
- Changing layer connection and model types to improve accuracy of models

### Simple Neural Network based TB Classification

CLEF

📄 Paper

2021

- Used CT-scan images to detect TB
- Handled Hounsfield input and used preprocessing to get the sections of interest
- **Technical Skills:** Tensorflow, Hounsfield

## Offensive text prediction using Machine Learning and Deep Learning approaches

FIRE

### Paper

2021

- Used Bi-LSTM for classification after based on native language tokenizer
- Used Naive bayes to get close results to the LSTM model

## Multi Regressor Based User Rating Predictor for ImageCLEF Aware 2022

CLEF

### Paper

2022

- Used classic random forest
- and pipelined with multi output regressor

## Abusive and Threatening Language Detection in Native Urdu Script Tweets Exploring Four Conventional Machine Learning Techniques and MLP

FIRE

### Paper

2021

- Vectorization and Tf-IDf
- Used classic MLP and SVM

## Co-curricular Activities

### SSN College of Engineering

Chennai, India

BE in Computer Science Engineering (8.9 CGPA)

2019 - 2023

- IEEECS Student Chapter Core Committee Member (Vice Chair)
- IEEE Student Chapter Core Committee Member (Treasurer)
- ACM Student Chapter Core Committee Member (Event Deputy Head)
- Computer Society of India Student Chapter Core Committee Member (Vice Chair)
- SSN Coding Club Committee Member (Competitive Programming Team)

## Extracurricular Activities

### SSN College of Engineering

Chennai, India

BE in Computer Science Engineering (8.9 CGPA)

2019 - Current

- IEEECS Student Chapter Core Committee Member (Vice Chair)
- IEEE Student Chapter Core Committee Member (Treasurer)
- ACM Student Chapter Core Committee Member (Event Deputy Head)
- Computer Society of India Student Chapter Core Committee Member (Vice Chair)
- SSN Coding Club Committee Member (Competitive Programming Team)
- Explained BART model and its usage in Dall-e like models in IVA pre-conference workshop 2023

## Work Experience

### Citi Bank

Chennai, India

Software Engineer

Aug 2023 - Present

- Commit tracking system, with added sentence similarity based contribution scoring
- got after a 3 month intern in 2022
- **Technical Skills:** Java, Spring, JPA, Git.
- **Soft Skills:** Teamwork, Time Management, Communication, Presentation skills.

### MultiOn

SF, California, USA

NLP Intern

Part Time

- Personalized Browser AGI tool MultiOn
- Built python API wrapper, integrated with LangChain
- **Technical Skills:** Python, FastAPI, Git, Web
- **Soft Skills:** Leadership, Time Management, Communication, Logical Thinking

## Achievements

2022 **Winner**, Smart India Hackathon (SIH)

India

2021 **Elite**, Competitive Programming NPTEL Exam

India

2021  **ICPC Kanpur-Mathura regionalist**, National Rank: 65

India

2018 **National level participant**, CBSE Science Exhibition

India

Max rating  **Codechef**, 1950

India

Max rating  **Codeforces**, 1501(Specialist)

India

## Skills

### Programming

Python (Pandas, PyTorch, NumPy, Scikit-learn, TensorFlow, Django, Flask), C/C++, Java(Spring), HTML/CSS, JavaScript(Nodejs), SQL.

### Soft Skills

Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.