Riya Raj

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Education

- **Vellore Institute of Technology** — Vellore, India
  Bachelor of Technology - Computer Science and Engineering — *July 2019 - April 2023* — ***CGPA: 9.12***

  Courses: *Data Structures and Algorithms, Operating Systems, Object Oriented Programming, Probability and Statistics, Applied Linear Algebra, Database Management System, Software Engineering, Data Visualization, Blockchain Technologies, Internet and Web Programming, Artificial Intelligence, Natural Language Processing, Human-Computer Interaction, Web Mining*

Skills Summary

- **Languages**: Python, Java, R, JavaScript, C++, C, SQL, COOL, HTML, CSS, Dart
- **Frameworks**: ExpressJS, ReactJS, NodeJS, Django, Flask, Ruby, Angular, TensorFlow, PyTorch, NumPy, Jupyter
- **Tools**: MongoDB, MySQL, SQLite, GIT, Vim, VSCode, XCode, Selenium, PostgreSQL, Ubuntu, Docker
- **Platforms**: Linux, MacOS, Windows, Web, Android, iOS, AWS, GCP, Firebase

Professional Experience

- **JP Morgan Chase & Co.** — Hyderabad, India
  Software Developer — *June 2023 - Present*
  - **React Application**: Collaborated with cross-functional teams to implement user feedback and iterate on feature designs, leading to a 20% increase in user satisfaction ratings.
  - **Data Visualization**: Developed and implemented interactive data visualization dashboards using Python, resulting in a 38% increase in stakeholder understanding of complex data.

  SWE Intern — *Feb 2023 - May 2023*
  - **Web Application**: Utilized advanced coding techniques such as **asynchronous loading** and **optimize database queries** to improve website performance, resulting in a load time reduction of 3 seconds and an overall increase in conversions.
  - **Data Visualization**: Created interactive dashboards and charts to help stakeholders understand complex data.

  Summer Analyst — *June 2022 - July 2022*
  - **Time Series Analysis**: Built a **machine-learning model** leveraging a pro-active approach to fix hardware issues utilizing the Time Series Model with high average accuracy. This impacts all JP Morgan employees globally.
  - **Web Application**: Developed an Interactive **React based web application** to visualise important data. Scraped and Visualised Data using Python.

- **Indian School of Business** — Hyderabad, India
  Data Science Intern — *Sept 2022 - Feb 2023*
  - **Data Scrapping and Visualization**: Worked with **Prof. Ashwini Chhatre** on the **India Data Portal** that is supported by the **Bill and Melinda Gates Foundation**. Developed a self-sustained Web Application for visualizing and extracting insights on data sourced from various **Departments of Indian Government**, demonstrating expertise in Python scripting and Selenium for handling large datasets.
  - **Blockchain Solution**: Collaborated with **Ethereum** to design a resilient blockchain solution for the **Initiative on Forest Economy**, establishing a secure, transparent ecosystem for the oversight and management of forest resources.

- **Indian Oil Corp. Ltd.** — Noida, India
  Machine Learning Intern — *May 2021 - July 2021*
  - **Automation System using Computer Vision**: Designed and implemented a payment system enabling customers to conveniently settle their fuel expenses through automated billing post-refueling. The system leveraged various Computer Vision technologies such as **OpenCV** and **YOLO** along with other relevant libraries.
  - **Blockchain Transaction Ledger**: Developed a **blockchain-based D-App** to record and secure transactions at an IOCL fuel center, ensuring data integrity and transparency.

- **Scaler Academy** — Bengaluru, India
  Product Marketing Intern — *June 2020 - Aug 2020*
  - **Workshop Organizer**: Led nationwide workshops, attracting 2,000+ students per session. Significantly contributed to increasing product visibility and generating enthusiasm among potential customers.
  - **Technical Blog Author**: Authored comprehensive computer science blogs on InterviewBit's platform, garnering an extensive readership of over 3000 individuals.
  - **User Experience Design**: Contributed to Scaler Edge's user experience enhancements, bolstering product appeal and usability.

Research Experience

- **"GenderDiscern": Detection of Implicit Textual Gender Attributes** — Hyderabad, India
  Research Intern - LTRC, IIIT-Hyderabad — *Dec 2022 - Present*
  - **Project Description**: Collaborated with **Prof. Radhika Mamidi** at the **Language Technologies Research Centre (LTRC)**, on a research project focused on classifying text styles as either feminine or masculine.
  - **NLP Techniques**: Employed Natural Language Processing techniques, including **opinion mining** and **sentiment analysis** to identify and distinguish unique text styles and patterns.
  - **Language Models**: Explored language models such as **N-grams**, **n-gram based** and **Hidden Markov Models** for text classification
  - **Deep Learning Models**: Took a proactive role in training and optimizing **deep learning models** for text classification, involving **recurrent neural networks (RNNs)**, **convolutional neural networks (CNNs)**, and transformer models such as **BERT** and **GPT**.
  - **Submission Status**: Primary Author of the paper scheduled for submission at the **ACL 2024** conference.
- **"Revolutionizing Healthcare": Blockchain's Transformative Applications** — Vellore, India
  Undergraduate Research Student - VIT Vellore — *Aug 2021 - Aug 2023*
  - **Project Description**: Collaborated with **Prof. Raja SP** on a research project focused on the applications of **blockchain technology in healthcare** and its transformative potential to impact the healthcare industry.
  - **Literature Review and Technological Analysis**: Conducted an extensive literature review, analyzing multiple research papers to identify state-of-the-art technologies used in healthcare applications, including medical records management, drug traceability, clinical trials optimization, telemedicine, and organ transplantation.
  - **Submission Status**: Primary Author of paper **Accepted** at **IEEE I2CT 2024** - International Conference for Convergence in Technology.
- **"Machine Learning and Healthcare": A Comprehensive Study** — Vellore, India
  Undergraduate Research Student - VIT Vellore — *Feb 2022 - Aug 2023*
  - **Project Description**: Conducted an in-depth and comprehensive study with **Prof. Jayakumar Kaliappan** on the wide-ranging applications of **machine learning in healthcare**, emphasizing its profound impact and transformative potential and highlighting its role in revolutionizing the industry.
  - **Literature Review and Technological Analysis**: Conducted extensive research and analysis on state-of-the-art applications, including Cancer Detection, Diabetes Detection, Heart Disease, Autism Spectrum Disorder, and Parkinson's Disease. Explored various machine learning algorithms such as **Random Forest** and **Gradient Boosting**. Conducted tests to assess model performance.
  - **Submission Status**: Primary Author of the paper **Accepted** at **ICCIS 2023**
- **Natural Language Processing Project** — Vellore, India
  Research Assistant - VIT Vellore — *July 2022 - June 2023*
  - **Project Description**: Collaborated with **Prof. Aswani Kumar Cherukuri** on an NLP project that aimed to generate text summaries for video lectures. The project involved extensive **data processing**, **sentiment analysis**, **perceptual question answering**, and **text summarization**. Contributed to the development of projects as a research assistant.

Projects

- **Image Outpainting** : Designed and Implemented Image Outpainting using Deep Convolutional Generative Adversarial Networks which extends the image to unknown areas in such a way that it appears realistic to human eyes and blends well with original picture. Implemented this using Python and its multiple libraries.
- **Resume Parser** : Designed and implemented a resume parser which takes in resume and keywords as input and lists the best candidates in sorted order. It is implemented in Python using NER training with SpaCy. Cosine similarity is used for ranking the resumes.
- **Covid Visualization** : A clear visualization of multiple factors involved in COVID-19 at National and Global Level. Have trained prediction model using fbProphet and compared with other Time Series Models. Used Medical Imaging Data to check preconditions that lead to higher chances of COVID-19.
- **Farmery** : An interactive website made using HTML, CSS, Javascript, MongoDB, ExpressJS, ReactJs and NodeJS to trade fruits, vegetables and other organic products directly from farms with specific detail on the User Interface and Experience.

Achievements and Volunteering

- **HPAIR - Delegate**: Attended the prestigious Harvard College Project for Asian & International Relations Conference 2020 in the Artificial Intelligence domain organized by Harvard University in January 2021.
- **MIT Sloan Bootcamp**: Selected in Top 2% of MIT - Sloan Innovation Leadership Bootcamp in February 2021.
- **Technovation - Student Mentor**: As a Student Mentor from January 2021 to April 2021, I guided and educated a cohort of 24 high school girls in STEM engagement, supervising their creation of a React-based website project and offering extensive support throughout the process.
- **GSSOC - Open Source Contributor**: Actively participated in GirlScript Summer of Code 2021 as an open-source contributor, collaborating with a global community of developers and contributing to various machine learning (ML) and natural language processing (NLP) projects.
- **Make a Difference - Volunteer**: Dedicated my time as an Academic Support Volunteer (ASV), mentoring two high school students to help them achieve their career goals. Additionally, I instructed 12^{th} grade students in Physics and Mathematics from January 2021 to August 2022.