

# RITWIK VAIDYA

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## EDUCATION

- North Carolina State University, Raleigh, NC** **08/2022 – 05/2024**  
Master of Computer Science (GPA 3.85/4)  
Courses: Database Management Concepts & Systems, Design & Analysis of Algorithms, Object Oriented Design & Development, Automated Learning and Data Analysis, Software Engineering, Cloud Computing Technology.
- Thadomal Shahani Engineering College, Mumbai University, India** **08/2018 – 07/2022**  
Bachelor of Engineering in Computer Engineering with *Distinction* (CGPA 9.44/10)  
Courses: Data Structures, Analysis of Algorithms, Object Oriented Programming, Database Management Systems.

## PROFESSIONAL EXPERIENCE

- North Carolina State University, Software Developer (Raleigh, NC)** **09/2023 – Present**
- Spearheaded the development of a graph editor for Probabilistic Risk Analysis (PRA) software at the Nuclear Engineering Department enabling users to log in, create, edit, and delete intricate graphs, with successful storage in the database, leading to a **30%** increase in user engagement.
  - Redesigned the software using **React**, **Typescript** on the frontend, **Nest.js**, and **MongoDB** on the backend contributing to a **25%** improvement in the efficiency and accuracy of systems' analysis of nuclear events.
- Amazon, Software Dev Engineer Intern (Seattle, WA)** **05/2023 – 08/2023**
- Developed a leave audit history difference viewer with **React**, enabling efficient comparison of audit versions, leading to faster request processing times, reduced time-to-decision & **70%** decrease in average time per case for case managers, increasing case manager efficiency and promoting potential headcount savings.
  - Simplified complex JSON Logic leave eligibility rules by storing them in a tree data structure in **Java**, incorporating evaluation outcomes for each rule condition which led to a **40%** reduction in rule interpretation time for case managers.
  - Modified the existing API to include this model & built a recursive component in **React** to render it, leading to improved employee experience for approximately **500K+** employees.
- North Carolina State University, Research Assistant (Raleigh, NC)** **09/2022 – 11/2022**
- Researched software, libraries, and packages to implement emotion detection using **MobileNetV2**, **DeepFace**, and **FER**, as well as attention analysis using **OpenFace** and **Dlib** library.
  - Automated analysis of these algorithms on system performance by logging metrics like CPU utilization, power consumption, memory & storage into CSV files using **Python** scripts reducing manual workloads by **40%**. Generated graphical reports in **Excel** to facilitate visualization and interpretation which helped navigate future research.
- Marketing Match Pvt. Ltd., Full Stack Developer Intern (Remote)** **06/2021 – 09/2021**
- Incorporated agile methodology to build the front end, integrate a content management system and a payment gateway and deploy the website on **Firebase** using **Next.js**, **Node.js**, and **Contentful CMS** for a travel agency.
  - Participated in daily meetings with other stakeholders twice a day and provided reports based on the project's progress. Built the company website and designed multiple landing pages for the clients.

## TECHNICAL SKILLS

- Programming languages: C/C++, Java, Python, TypeScript
- Web Technologies: HTML, CSS, Bootstrap, JavaScript, React.js, Next.js, Express.js, Node.js, Nest.js, Ruby on Rails
- Databases: MongoDB, MySQL, PostgreSQL | Others: Git, Linux, CI/CD, Problem Solving, Collaboration, Innovation

## ACADEMIC PROJECTS

- Web Application | The Social Helper | HTML, CSS, Express.js, Node.js, MongoDB**
- Worked in a team of 3 in developing a web application for an NGO named "Aapka Sahara Foundation" where the elderly people could talk and meet with volunteers of the organization in their vicinity.
  - Integrated a chat feature employing Web Sockets for the users to connect and schedule an online or offline meetup.
- Database Application | WolfMedia | Java Spring Boot, JPA, MySQL**
- Designed the database model for a media streaming service to manage artists, record labels, songs, podcast, podcast hosts and their payments & subscriptions.
  - Created ER diagrams to conceptualize the schema and translated them into normalized relational tables. Crafted a Spring Boot application to provide endpoints for CRUD operations to manage the streaming service.
- Data Science | Data Science Salary Prediction Application | Python, Flask, Selenium, Sci-Kit Learn**
- Programmed an application for job seekers to get an estimate of the salaries of various data science jobs.
  - Created a dataset by web scrapping the data science job postings from Glassdoor website and trained the Random Forest model on the same dataset with a Mean Absolute Error (MAE) of **11.22**.
  - Modeled a client facing API with Flask that took input features like location, job description, company rating, etc. for the regression model to give an estimate of the salary.