

N K Vinay Kumar

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EDUCATION

San Francisco State University

Master's Degree, Computer Science | GPA: 3.9/4.0

San Francisco, CA, USA

Jan 2023 - Dec 2024

Jawaharlal Nehru Technological University

Bachelor's Degree, Computer Science & Engineering

Hyderabad, India

Jul 2018 - Aug 2022

SKILLS

Programming Languages: Java, Python, JavaScript, TypeScript, C++

Web Technologies: React, Next.js, Spring, Hibernate, Node, Django, LangChain, Flask, Jest, HTML, CSS, Bootstrap, REST APIs, GraphQL

Databases & Platform: GCP, AWS, Docker, Apache Kafka, SQL (MySQL, PostgreSQL), NoSQL (MongoDB, Redis)

Tools & Soft Skills: Git, Linux, Postman, Agile, Algorithms, Problem-solving, Communication, Collaboration.

EXPERIENCE

Software Engineer | San Francisco State University

May 2023 - May 2024

YouDescribeX SFSU

- Contributed to developing [YouDescribeX](#), an application that generates audio descriptions by implementing a human-in-the-loop machine learning approach for video text extraction and scene segmentation, while enabling user editing for refined outputs.
- Redesigned critical **React** components of the existing web interface for sighted volunteers, simplifying the process of adding audio descriptions, significantly enhancing video **accessibility** for blind and visually impaired individuals.
- Optimized [YouDescribeX](#) architecture leveraging **AWS Lambda** and **S3**, for improved cost-efficiency and high availability.

Team Lead | MyCareerChamp - AI resume builder

- Developed [MyCareerChamp](#), a resume builder with **React**, **JavaScript**, **LLM**, and **Python**, serving **100+** university students.
- Engineered **20+** reusable React components, custom hooks, and Context API, each optimized under **10 KB** for code reusability.
- Optimized frontend with lazy loading and code splitting, reducing **Webpack** bundle size by ~6 KB, improving initial page load speed.
- Developed **Python** methods and **Flask APIs** to automate resume creation incorporating **OpenAI API**, reducing manual effort and turnaround time by up to 50% through language model **prompt engineering**.
- Formulated and optimized **PostgreSQL** queries and designed complex **JSON** data storage and indexing for flexible resume structures, improving data retrieval speed and supporting dynamic resume customization.

Teaching Assistant | SFSU Department of Computer Science

Sept 2023 - Dec 2023

- Delivered lectures on **Object-Oriented Programming**, **Microservices**, **Cloud Services**, **Testing**, **CI/CD**, and **Agile practices**.
- Mentored **30+** students, provided collaborative assistance on academic group projects and conducted **code reviews**.

Machine Learning Intern | Ram Innovative Info tech

Jan 2022 - Jun 2022

- Developed an **ML** model for drowsiness detection using **PERCLOS** algorithm, achieving 89% accuracy in real-time driver alerting.

ACADEMIC PROJECTS

Prep Pal: (Python, LangChain, Streamlit, Fast API, MongoDB, Pinecone) | [GitHub Repo](#)

- Developed AI-powered copilot with **GPT**, **LangChain** and **Python**, that aids students for personalized interview coaching.
- Fine-tuned** OpenAI language model with training and test datasets, improving model's ability to generate structured responses by 40%.
- Built a **data pipeline** to automate storage of user resumes and additional data from career sites as embeddings into vector database.
- Employed vector **Similarity Search** to fetch relevant data from the vector database based on user's input, reducing context size to **LLM**.
- Optimized **RAG** pipeline with MapReduce method for asynchronous batch API requests, reducing extensive OpenAI API costs by 30%.

Pulse Events: (Next.js, TypeScript, Java, Spring, MongoDB, Docker, Kubernetes, GCP) | [GitHub Repo](#)

- Developed an event hosting and management website with **Next.js**, **Java**, **Spring Boot**, and **MongoDB**. Integrated secure **JWT** authentication and role-based authorization with **Spring Security**, resulting in enhanced **API security** and performance.
- Implemented **MVC** architecture and developed **RESTful APIs** to improve backend application modularity and maintainability.
- Created modular **React** components, optimized initial load time by 20% using **server-side rendering (SSR)** and **cloud CDN** caching.
- Employed **Docker** and GitHub Actions for **CI/CD workflows**, facilitating automated deployments to **Google Kubernetes Engine**.

Picture Perfect: (React.js, JavaScript, Django, MySQL, Jest, Docker, AWS, Figma) | [GitHub Repo](#)

- Led a cross-functional team of 5 to develop an image sharing and digital marketplace web application, following end-to-end **Agile SDLC**.
- Designed and implemented highly available architecture on **AWS** using **EC2**, **S3**, and **RDS**, ensuring 99.9% uptime and scalability.
- Collaborated in designing and developing **Django RESTful API** endpoints with **Python** and optimized **MySQL** queries through indexing.
- Incorporated image editing components in the **React** application using Canvas API, conducted unit tests with **Jest** to ensure functionality.

Prayan: (React Native, JavaScript, Expo, Firebase, Google Gemini, GCP) | [GitHub Repo](#)

- Developed an AI travel planner app using **React Native**, **Expo**, and **Gemini API**, integrating Google Places and Maps APIs to provide personalized itineraries, flight details, hotel recommendations, and location-based search for enhanced trip planning.

LEADERSHIP EXPERIENCE

President's Leadership Fellow: Promoted inclusive leadership by encouraging fellows to engage in development activities and mentoring.