

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

Hyderabad, India

July 2018 - Aug 2022

SKILLS

- **Programming Languages:** Java, Python, JavaScript, TypeScript, C++, HTML, CSS, SQL
- **Frameworks & Technologies:** React, Next.js, Spring, Hibernate, Django, Flask, NodeJS, LangChain, REST APIs, MySQL, PostgreSQL, MongoDB, Redis, Jest, OpenCV, Docker, Kubernetes, AWS, Google Cloud Platform
- **Tools & Methodologies:** Git, Object-Oriented Design, Algorithms, Problem-solving, Communication, Distributed Systems

EXPERIENCE

Software Engineer | San Francisco State University

May 2023 - May 2024

YouDescribeX SFSU (React, TypeScript, MongoDB, AWS Lambda, S3)

- Contributed to developing [YouDescribeX](#), an application that uses human-in-the-loop machine learning approach for video text extraction and scene segmentation, enabling video accessibility for visually impaired users.
- Revamped core React components of the existing web interface, simplifying the process of adding audio descriptions, significantly improving 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 (React, JavaScript, Python, Flask, PostgreSQL)

- Led development of [MyCareerChamp](#), a resume builder app with React, JavaScript, 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 process 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 formatting 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.

Software Engineer Intern - Machine Learning | Ram Innovative Info tech

Jan 2022 - Jun 2022

- Developed a real-time Drowsiness Detection System using OpenCV and Raspberry Pi, achieving 95% accuracy in detecting fatigue.
- Implemented an algorithm for eye aspect ratio (EAR) using Haar-Cascade classifier and PERCLOS to monitor and analyze eye closure patterns, triggering alerts when a driver's eye closure exceeds a defined threshold.
- Integrated webcam, alarm, and sensors for low-light conditions, to capture live video streams and process frames, making it low-cost and portable system for automotive safety applications

PROJECTS

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

- Developed AI-powered copilot with GPT, LangChain and Python to assist students with personalized interview coaching.
- Fine-tuned the OpenAI language model on training and test datasets, enabling LLM to generate tailored and structured responses.
- Built a data pipeline to automate storage of user resumes and relevant data into Pinecone vector database as embeddings.
- Employed vector Similarity Search to fetch relevant data from vector database based on user input, reducing context size to LLM.
- Optimized RAG pipeline with MapReduce 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 a scalable event hosting and management platform using Next.js, Java, Spring Boot, and MongoDB, enhancing security with JWT authentication and role-based authorization.
- Created modular React components, optimized initial load time by 20% using server-side rendering (SSR) and cloud CDN caching.
- Designed and implemented MVC architecture and RESTful APIs to improve backend modularity, maintainability, and performance.
- Employed Docker and GitHub Actions for CI/CD workflows, streamlining automatic 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 app following end-to-end Agile SDLC.
- Built and improved core features of React application, including image editing, image moderation, and search functionality. Conducted unit tests with Jest for debugging and ensuring functionalities.
- Collaborated in designing and developing Django RESTful API endpoints with Python and optimized MySQL queries to expedite the retrieval and processing of data on the server side, enhancing website performance.
- Architected and deployed a highly available infrastructure on AWS using EC2, S3, and RDS, ensuring 99.9% uptime and scalability.

LEADERSHIP & VOLUNTEER EXPERIENCE

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