SAKSHAM RAI

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Education

University of California San Diego | *La Jolla, California*   *October 2020 – June 2024*

- **Degree:** BS. Mathematics-Computer Science, Double Minor – Cognitive Science, Innovation and Entrepreneurship
- **Academic Achievements:** Departmental Provost Honors (x6), Sophomores Honors Program (x1), Blackstone Launchpad Program.
- **Associations**: CSForEach, Engineers for Exploration, UCSD Speech and Debate, The Basement Entrepreneurs Program and UCSD Cricket Team.

Experience

Team Lead | *DevSurf*   *April 2024 – June 2024*

- Led the creation of DevSurf; an interactive developer journal web app that allows developers to create, edit and store journal entries about their work.
- Coordinated efforts among 12 developers, including a successful mid-quarter app pivot, based on professor and user feedback - all while ensuring timely delivery of project milestones in a fun collaborative environment.
- Developed secure backend functionalities for user registration using Node.js and SQL Lite, project widget CRUD operations, and frontend design for the home page.
- Optimized code across all modules, including writing pipeline code for automated GitHub workflows, documentation generation, unit testing, and formatting.

SDE Intern | *AfyaChat*   *March 2024 – April 2024*

- Developed an AI-based platform to reduce lag time in eConsultation between Primary Care Physicians and Specialists.
- Utilized GPT 3.5 and Lama Index to generate 3 separate microservices: finding missing info in eConsult, generating targeted questions and evidence-based recommendations.
- Utilized Twilio to facilitate real-time text message notifications for the PCP for each microservice.
- Preprocessed 7 years' worth of chat history between PCPs and Specialists to generate responses, achieving 90% accuracy in providing medically sound recommendations (specialist verified).
- Presented the application at the inaugural Afya Hackathon Demo-Day to the Founder and CTO, earning runners–up recognition.

Founder, CTO | *Karya – Productivity*   *April 2023 – Present*

- Co-founded an AI-powered productivity SaaS startup at UCSD's The Basement; secured off-cycle recruitment.
- Developed Karya's UI prototype with Uizard and launched an engaging product website, highlighting the company vision and key product features.
- Spearheading MVP development using React, Node.js, and MongoDB, amassing 50+ beta testers.
- Optimizing LLM models like DistilBERT and GPT-3 for strategic academic planning.

SDE Intern | *San Diego Police County*   *Dec 2022 – June 2023*

- Developed an SEO-optimized website for HRCSD's Naloxone Program using HTML, CSS, and JavaScript.
- Engineered a secure registration system via PHP and MySQL; onboarded 3500+ users in 4 months.
- Automated data transfers from 12 anti-opioid machines and 6 NAP sites to UCSD.
- Established a portal for Naloxone reversals and potential NAP site reporting, onboarding 14 collaborators.

SDE Intern | *Black Logics*   *Sept 2022 – Dec 2022*

- Overhauled BlackLogics' website pre-production, enhancing visuals and interactivity using Figma, CSS, HTML, and Js.
- Boosted SEO with faster loading speeds through image minimization, browser caching, and keyword optimization.
- Implemented SSL certification and fortified server-side input validation to ward off SQL injections.

Projects

American Sign Language Recognition | Machine Learning Project   *January – March 2024*

- Utilized both supervised (CNN, SVM) and unsupervised (K-Means, GMM) models on 27,455 ASL samples, demonstrating strong image recognition capabilities.
- Developed a camera-based system for real-time ASL interpretation, achieving high accuracy comparable to Google's Teachable Machine.
- Applied PCA to enhance the speed and accuracy of ML models, critical for real-time ASL interpretation applications.

Operational Airline Delay Data Science Project   *October – December 2023*

- Conducted EDA of 18 airlines' 25-year financials and delay data, emphasizing data wrangling, data visualization and outlier analysis.
- Performed Linear Regression testing on expenses and revenue, scaled by the average delay of each airline to test the relationship between operational investments and average delay incurred.
- Co-authored a substantive academic paper, synthesizing analytical insights drawn from the research.

Moon-Markers 2.0 | *Nasa Space Apps 2023 Hackathon*   *October 2023*

- Developed a 3D moon visualization using NASA's CGI Moon Kit with React and Three.js.
- Integrated Flask and Python with JavaScript for dynamic data visualisation of the Apollo Seismic Event Catalogue.
- Highlighted moonquakes, Apollo mission landings, and key geological features.

Talk – To - Abel | *SDX – AI Hackathon 2023*   *August 2023*

- Developed a multi-language educational speech bot using Open Ai's GPT-4, TypeScript, React, and Node.js; ranked in the top 10 projects.
- Implemented real-time voice chat via WebSocket, bolstered with Zustand state management for secure, two-way interactions with Abel.
- Enhanced user experience by crafting unique personality profiles; driving higher user satisfaction and retention.