PREKSHA KHATRI

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EDUCATION

University of Southern California, Viterbi School of Engineering   Aug 2024 - May 2026
Master of Science in Computer Science   Los Angeles, CA
Coursework: Web Technologies, Software Architectures, Natural Language Processing, Deep Learning   GPA: 3.7/4

Dwarkadas J. Sanghvi College of Engineering, University of Mumbai   Dec 2020 – May 2024
Bachelor of Technology in Computer Engineering   Mumbai, India
Honors: Intelligent Computing   GPA: 9.33/10

TECHNICAL SKILLS

- **Languages**: Python, JavaScript, TypeScript, C++, Java, SQL, Swift, Go, CUDA (basic), R (academic)
- **Frameworks & Libraries**: React, Next.js, Node.js, Express, Flask, Django REST, SwiftUI, Bootstrap, Tailwind CSS
- **AI/ML Technologies**: PyTorch, TensorFlow/Keras, Scikit-Learn, Transformers, YOLO, OpenCV, RAG, LangChain, PySpark
- **DevOps & Cloud Tools**: Git, Docker, Kubernetes, AWS, Google Cloud, GitHub Actions, Jenkins, CI/CD
- **Databases & Big Data**: MySQL, PostgreSQL, Firebase, MongoDB, Hadoop, Hive (HQL) | **Platforms:** Power BI, Tableau, Figma

EXPERIENCE

USC Leonard Davis School of Gerontology | Web Developer   Los Angeles, CA | **Oct 2025 – Present**
- Develop new features and interactive components for the **Center for Advancing Caregiver Financial and Workplace Security website** in **JavaScript, jQuery, HTML/CSS, PHP, and WordPress/WPBakery** while maintaining codebase and improving performance
- **Debug 15+ production issues** monthly across a shared backlog, addressing broken links, JavaScript conflicts, and cross-browser bugs
- Implement **WCAG 2.1, Section 508** accessibility standards across **20+ pages** through responsive design, ARIA labels, and HTML testing

Indian Institute of Technology, IIT Patna | Research Assistant   Remote | **May 2023 – Apr 2024**
- Built MemeIn, a **multimodal LLM (LLaMA, FLAN-T5) and VLM (ViT, SwinTransformer)** framework for harmful meme target and attack classification (~**90% accuracy**) and intervention generation (**BLEU 43–44, BERTScore 51–52**); co-authored **2 research papers**
- Curated **MemeProtect** (3,244 memes) and led annotation, reaching **93% target**, **91% attack accuracy** and **4.8/5 intervention quality**
- Optimized LLM via **QLoRA fine-tuning**, cutting **compute by 60%** while maintaining SOTA performance; conducted literature reviews

Prosares Solutions Pvt. Ltd. | AI-ML Developer Intern   Mumbai, India | **Aug 2023 – Feb 2024**
- Developed a **real-time night-vision system** for solar installations using **YOLO-NAS** and **YOLOv8** with **92% mAP** on dark-scene datasets
- Reduced false alarms by **27%** and improved site-safety monitoring efficiency by **35%** through fine-tuned object detection algorithms
- Led **3-member team** to implement AI-driven contract analysis pipeline with **BERT, RoBERTa, and Legal-BERT** transformer models
- Boosted entity-extraction accuracy from **78% to 91%** and reduced manual review time by **65%** through legal document processing

HDLC Technologies | Software Developer Intern   Remote | **Jun 2022 – Sep 2022**
- Created **responsive front-end components** for a food delivery platform with **React, Bootstrap, and AJAX/JSON** for real-time order data
- Designed mobile app with **React Native and Django** REST Framework, automated payment and order-tracking workflows on **AWS Cloud**
- Tested **30+ REST APIs** with Postman and streamlined **CI/CD pipelines using Jenkins**, accelerating deployments by **25%**   [App Link]

PROJECTS AND PUBLICATIONS

AeroView – Cross-Platform Weather Forecast App | Swift, SwiftUI, React, TypeScript, Node.js, MongoDB, Google Cloud | [App Demo]
- Developed a responsive **full-stack weather forecasting website** in **React, Bootstrap, Node.js** with **MongoDB Atlas** for data storage
- Integrated Tomorrow.io, Google Maps/Places, IPinfo APIs for real-time location-based **15-day forecasts** deployed on **Google Cloud**
- Built a **SwiftUI iOS companion app** leveraging CoreLocation, Alamofire, **SwiftyJSON,** HighCharts, and **Twitter API**, featuring auto-location detection, interactive forecasts, searchable city autocomplete and cloud-synced favorites for a cross-platform experience

Vulnerability Detection & Correction Tool | GPT-2, BERT, T5 | [Final Report]
- Created a buggy code vulnerability detection model with **93% classification accuracy** using **CNN, LSTM, and Bi-LSTM** architectures
- Trained and fine-tuned **BERT, GPT-2, and T5** on the **CVEFixes dataset** to learn vulnerability patterns and auto-generate corrected code patches across multiple CWE categories, reducing manual debugging effort and enabling continuous automated code repair

PikFresh – Fruit Quality App | React Native, Flask, CNN Architectures | [Figma link] | [App Demo] | [Publication Link]
- Engineered CNN models (**ResNet50, VGG16, InceptionV3**) for fruit quality detection, with ResNet50 achieving **87% accuracy**
- Delivered an **Android app** using **React Native + Flask** enabling photo capture and a fruit-specific questionnaire for quality assessment
- Generated quality reports with purchase recommendations, shelf-life prediction, and refrigeration guidance; **published in IEEE Xplore**