

Hrishikesh Kini

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EDUCATION

University of California, Irvine

Irvine, CA

B.S. in Computer Science, Minor in Statistics | **GPA: 3.72** | **Dean's Honor List**

Sep 2024 – Jun 2027

- **Coursework:** Data Structures & Algorithms, Systems Programming (C), Information Retrieval, Machine Learning, Probability & Statistics for CS, Intermediate & Advanced Python

EXPERIENCE

Research Intern

Remote

BoundaryRSS

Apr 2026 – Present

- Lead development of the subsurface exploration model within the hyperspectral and subsurface imaging pipeline, implementing spectral unmixing techniques, a spectral indices library for pathfinder element and trace mineral mapping, and integrating the Skeltl petrophysical model for oil, gas, and geothermal exploration applications.
- Engineered the model as a modular Python codebase and wrote validation routines benchmarking depth sensitivity and baseline algorithms against known exploration sites to ensure accuracy, reproducibility, and correctness.
- Expanded the spectral library to enable wider surface and subsurface material mapping, and coordinated with the data visualization team to accurately represent exploration results across 2D and 3D viewing platforms.

Learning Assistant — Math 1B (Precalculus 2)

Irvine, CA

UCI Department of Mathematics

Sep 2025 – Present

- Supported 100+ students by clarifying mathematical concepts during lectures and running weekly office hours with individualized tutoring and guided problem-solving techniques.
- Collaborated with the course professor to facilitate classroom activities, design supplementary materials, and create an engaging learning environment improving student comprehension.

Co-Founder & Head — BITbyBIT STEM Club

Mumbai, India

Bombay Scottish School, Mahim

Mar 2023 – Jun 2024

- Founded and led the school's first STEM club, designing a structured programming curriculum (Python, Flutter, Swift) and teaching 50+ students across grades 7 through 12, while managing lesson planning, assessments, and certification end to end.

PROJECTS

ClauseGuard — AI-Powered Legal Document Analyzer | *FastAPI, React, TypeScript, pdfplumber, Groq* **Live Demo**

- Engineered an end-to-end document intelligence pipeline that parses, analyzes, and risk-scores legal contracts (residential leases, NDAs, employment agreements) using Llama 3.3 70B via Groq, with a custom pdfplumber-based preprocessing layer to normalize structurally inconsistent PDF layouts before model ingestion.
- Designed a smart clause selection algorithm scoring every extracted clause by keyword importance and ranking clauses and risks in priority order, surfacing the most critical issues first instead of in raw document order.
- Built a multi-stage analysis pipeline producing a structured plain-English contract summary (parties, dates, payment terms, policies), classifying clauses into high and medium risk tiers, and generating a 0–100 document safety score with targeted negotiation recommendations.
- Developed a hand-crafted risk rubric grounded in analysis of 40+ real-world leases; architected a fully stateless FastAPI backend with in-memory processing and zero data retention, deployed on Hugging Face and Vercel at zero infrastructure cost.

F1 2026 Race Strategy Optimizer | *Python, FastAPI, Streamlit, FastF1, NumPy*

- Engineered a Monte Carlo simulation engine modeling probabilistic pit stop and tire degradation strategies under 2026 F1 regulations, processing 10,000+ race scenario iterations per session.
- Built a deployment-ready Streamlit dashboard with live race mode and integrated FastF1 to ingest historical telemetry across 20+ Grand Prix weekends, improving accuracy through iterative calibration.

MySpotify — Music Analytics Dashboard | *React, TypeScript, Node.js, Express, MongoDB, Mongoose, Recharts*

- Built a full-stack application with React/TypeScript frontend and Node.js/Express API, integrating Spotify OAuth 2.0 to visualize listening history, genre distribution, and mood heatmaps; deployed on Render with GitHub Actions CI/CD.
- Engineered a MongoDB/Mongoose caching layer with TTL-based expiry to reduce Spotify API calls by 80%, and implemented linear regression on mood trends, k-means clustering for taste profiling, and z-score anomaly detection on listening patterns.

UCI Search Engine & Web Crawler | *Python, Streamlit, TF-IDF, SimHash*

- Built a multi-threaded web crawler indexing 20,000+ pages across ics.uci.edu with politeness policies, robots.txt compliance, and SimHash near-duplicate detection that cut index bloat by 27%.
- Constructed a persistent inverted index over 800,000+ tokens with TF-IDF / HITS ranking, delivering sub-second search results through a custom Streamlit front-end.

TECHNICAL SKILLS

Languages: Python, C, C++, SQL, JavaScript, TypeScript, HTML/CSS, Java, Swift, MIPS (Assembly)

Libraries & Frameworks: React, Node.js, Express, Mongoose, Pandas, NumPy, Matplotlib, Seaborn, FastAPI, Streamlit, Flask, BeautifulSoup, Recharts, pdfplumber

Developer Tools: Git/GitHub, Docker, GitHub Actions (CI/CD), Render, Hugging Face, Vercel, Linux/Unix, Jupyter, VS Code, MongoDB, MySQL, REST APIs

Core Competencies: Machine Learning, LLM Integration, Information Retrieval, Statistical Inference, Data Structures & Algorithms, OOP, REST API Design

Certifications: Harvard University CS50 — Introduction to Computer Science