Rudra Khakhar

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Education

California Polytechnic State University — San Luis Obispo, CA
Computer Engineering — *Sept 2022 – June 2026*

Experience

AI/ML Intern — Environmental Health & Safety (EHS) — July 2025 – Present
Cal Poly — *San Luis Obispo, CA*

- Led end-to-end design & prototyping of a web-native **Enterprise Risk Management (ERM)** tool with an interactive **Risk Heat Map** and real-time **Analytics Dashboard** to modernize assessment & compliance workflows.
- Architected dual AI layers: a **client-side NLP** classifier for instant risk categorization and a **custom LLM** for context-aware mitigation recommendations.
- Productionized document-understanding models for inspection PDFs (e.g., **CAL FIRE** reports), converting unstructured text into structured, analyzable tables and eliminating **hundreds of hours** of manual entry & tracking.
- Built end-to-end pipelines with **Microsoft Power Automate**/ (Outlook, SharePoint, OneDrive) to ingest emails/attachments, run **OCR** extraction, normalize outputs to **JSON/CSV**, and publish to downstream systems & dashboards.
- Scoped secure, cloud-native transition with **Amazon AWS DXhub** and university leadership, including Cal Poly SSO integration and alignment with campus security/compliance expectations.
- Partnered with inspectors & EHS staff to translate operational needs into resilient, security-minded workflows; delivered **Power BI** views that improve real-time visibility and quantify automation impact.

Risk Management Intern — June 2025 – Present
Cal Poly Risk Management — *San Luis Obispo, CA*

- Centralized and analyzed a decade of claims and incident logs using **Python**/**Excel**; engineered features and performed **unsupervised data clustering** to segment **thousands of claims** by severity/complexity/drivers—accelerating triage, filtering noise, and surfacing outliers.
- Developed an internal **risk-scoring & triage** web tool (HTML/JS): captures risks/mitigations, computes inherent vs. residual risk via a 5×5 impact/likelihood matrix, labels control adequacy, sorts the portfolio by residual risk, and exports review artifacts.
- Led **Cal Maritime** merger exposure analysis—isolated **$700K+** open claims, mapped paid losses to X-Mod drivers, and forecasted future exposures to guide reserves and timelines.
- Researched **AI risk governance** and model-risk practices (e.g., **NIST AI RMF**, **ISO/IEC 23894**) to inform future ML-based risk tooling; proposed safeguards for PII handling, model documentation, human-in-the-loop review, and monitoring—aligned with in-demand **LLMOps/governance** trends.

Projects

High-Altitude Telemetry Platform (Mesosphere) — OWL Integrations — Jan 2025 – June 2025

- https://www.owlintegrations.com/industries/goverment-defense
- Prototyped resilient, low-power mesh networking with the **ClusterDuck Protocol (CDP)** in conjunction with LoRaWAN to improve long-distance message relaying and redundancy.
- Integrated a **Raspberry Pi** AI camera running **YOLOv12** for on-board object recognition, enabling event-triggered notifications.
- Led Agile delivery for a four-engineer team; produced technical docs and presented milestones to xTechSearch/USAF stakeholders, enabling repeatable launches and stakeholder sign-off.

AI Digital Transformation — Meera Services — June 2024 – Sept 2024

- Rebuilt the billing data pipeline in **Python** on **Google AI Platform**/**RapidMiner** to standardize subscription/usage/disconnect events, add basic checks, and make jobs **idempotent**—cutting rework and errors.
- Added simple **anomaly checks** for missing/duplicate charges and stuck jobs, with **PagerDuty** alerts—improving SLA reliability (∼15%) and reducing manual fixes (∼30%).
- Strengthened reliability with **API validation**, retries, and safe replays; documented the flow with clear diagrams and short runbooks.
- Protected data by masking **PII** in logs and tightening access/secrets.

Technical Skills

Languages: Python, Java, C, JavaScript, System Verilog, Arduino, Assembly, HTML, SQL

AI/ML & Automation: Azure Cognitive Services (Form Recognizer, OCR, NLP), Microsoft AI Builder, Power Automate, AWS Sagemaker

Data & Visualization: Power BI, Excel, REST APIs/JSON, SharePoint, Data pipelines (cleaning/validation)

Developer Tools: Git, VS Code, Jupyter Notebook, Vivado; **Cloud**: Microsoft Azure, Google Cloud Platform

Coursework: Algorithmic & Digital Logic Design; UNIX/Linux Fundamentals; Robotic Applications & Design; Microcontrollers & Embedded Systems; AI; Data Structures & Algorithms; Advanced Java; Computer Organization; Data Security; Statistics; Linear Algebra; Calculus