

ISHIKA NAHAR

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EDUCATION

University of California, San Diego

B.S. Cognitive Science (Machine Learning & Neural Computation) | B.S. Neurobiology

Awards: Provost Honors, FREEMIND Program 2026 Recipient

San Diego, CA

July 2027

WORK EXPERIENCE

UC San Diego Neurobiology Lab | Data Engineering Research Assistant

June 2025 – Present | San Diego, CA

- Built a computer-vision pipeline to quantify social learning in mice, training **SLEAP multi-animal pose-estimation on 8,200 labeled frames** across 3 labeling batches to track 4 anatomical keypoints across 2 interacting mice while maintaining identity between frames
- Engineered behavioral features from pose trajectories and aligned them with ELAN ground-truth annotations; trained an **XGBoost classifier with 0.85 mean ROC-AUC across 5-fold cross-validation** and explored HMMs for temporal behavior modeling
- Developed Python visualization tools and a PyQt validation GUI for **human-in-the-loop error analysis**, identifying failure modes including occlusion, identity switches, and low-confidence tracking for targeted retraining; contributed analyses presented at the 2025 Society for Neuroscience (SfN) Annual Conference

Luveo Health | Machine Learning Intern

June 2026 – Present | San Diego, CA

- Mapped and extended the architecture of an **AI compliance platform** that normalizes Epic, Pyxis, and Omnicell events, evaluates them against pharmacy rules, and converts failures into natural-language guidance and role-specific tasks
- Built an end-to-end demo integration connecting **React, FastAPI, HL7 v2.5, and FHIR R4**, transforming 8 medication scenarios into dispensing-system payloads and returning structured Pass, Warning, or Fail evaluations
- Instrumented the LLM explanation layer with **Langfuse tracing** to inspect prompts, tool calls, latency, and failure modes; strengthened grounding with structured workflow and regulatory schemas

Skillsoft Corporation | Product & Content Strategy Intern

July 2024 – Sept 2024 | Remote

- Analyzed CAISY beta conversation logs and learner cohorts in **Tableau and Power BI**, visualizing engagement patterns, recurring queries, and differences in how user groups responded to role-play scenarios; translated findings into prompt and audience-targeting improvements
- Curated Percipio metadata and technical learning paths in **Excel** for roles including Azure AI Engineer and Data Architect, then developed a Systems Engineering benchmark planbook used by Instructional Design to prioritize new content

PROJECTS

K-Scope | 1st Place, OWKIN Rewiring Biology Hackathon

- Built a **mechanistic interpretability framework** that transforms pathology foundation model predictions into auditable evidence cards, evaluating whether tumor, immune, stromal, and other tissue concepts are causally used by the model rather than merely correlated with its predictions
- Developed a reusable evaluation pipeline across 2 frozen vision foundation models, 5,400 pathology image tiles, and 9 tissue classes, implementing concept probes, **latent-space interventions and matched-random controls** to measure necessity, sufficiency, and specificity without fine-tuning the underlying foundation models
- Engineered an **AWS SageMaker** inference pipeline for embedding extraction, representation-level interventions, and evidence generation, extending the framework to 20 certifiable tissue and cell concepts

MOMentum – Context-Aware Personal AI Assistant | UC San Diego × Y Combinator Hackathon

- Built a context-aware personal AI assistant that combines **retrieval-augmented generation (RAG)** with live behavioral signals to deliver proactive recommendations and conversational assistance based on user tasks and activity context
- Implemented a semantic memory layer using **sentence-transformers and FAISS** to embed user knowledge, retrieve top-k relevant context at inference time, and ground LLM responses with personalized memory

LEADERSHIP AND ACTIVITIES

Muir College Orientation Leader, UC San Diego

Oct 2024 – Oct 2025 | San Diego, CA

- Mentored incoming first-year and transfer students during orientation, leading small-group discussions and facilitating campus transition alongside college staff and fellow Orientation Leaders

National-Level Competitive Swimmer | India & UC San Diego Swim Club

Jun 2019 – Dec 2025 | San Diego, CA

- Won **1st place at the CISCE National Swimming Championships** in breaststroke, qualified for the School Games Federation of India, and placed 9th nationally, later continuing competitive swimming with the UC San Diego Swim Club

TECHNICAL SKILLS

Python, SQL, PyTorch, scikit-learn, XGBoost, Hugging Face, SLEAP, FastAPI, FAISS, Langfuse, AWS SageMaker, RAG, Computer Vision, LLM Evaluation