

Karsten Lowe

🌐 KarstenLowe.com | 📞 214-478-3761 | ✉ karslowe0@gmail.com | 🔗 linkedin.com/in/karsten-lowe | 🐙 github.com/karslowe

EDUCATION

University of California San Diego

Bachelor of Science in Data Science

La Jolla, CA

Sep 2025 – June 2028

EXPERIENCE

Machine Learning and AI Engineer

June 2026 – Present

GelTech Labs

San Diego, CA

- Co-developed AnGel AI, a cloud-based R&D testing service for GelTech's hydrogel hardware that sharpens its predictions with every test via gradient-boosted models.
- Spearheaded a live PostgreSQL database synced in real time through MQTT publishers deployed on GelTech's hardware.
- Built XGBoost and PyTorch ML pipelines, exposed as callable tools for a self-hosted open-weights LLM that recommends clients' remaining tests and price estimates.

Software Engineer

June 2026 – Present

Laxcen Technologies

Laguna Hills, CA

- Built an internal pricing tool used across the entire sales department, integrating a PostgreSQL price database with the Frankfurter API for live USD-to-CNY conversions.
- Designed Laxcen's website AI assistant using a RAG pipeline and vector database over the product catalogue to return source-grounded answers to customer queries.
- Led RFID market research spanning logistics, asset-tracking, and livestock applications; presented findings to CEO Dr. Haitao Si and Director of Sales Kevin Wang.

D1 Sports Analyst

January 2026 – Present

UCSD Women's Volleyball Team

San Diego, CA

- Built an in-game play predictor using recurrent neural networks to forecast opponents' next attack live from sideline-tracked data.
- Developed a Regularized Adjusted Plus-Minus (RAPM) model with scikit-learn RidgeCV over league-wide Big West Conference VolleyMetrics data (1,000+ Division I players), ranking each player's contribution to win probability via a weighted ensemble.

PROJECTS

CarbinWatcher | *Python, C++, React, Next.js, AWS (IoT Core, Kinesis, S3), Databricks* April 2026 – Present

- Won 3rd place at UCSD DataHacks 2026. Built the autoscaling backend for a computer-vision smart trash can that tells users which bin to use.
- Architected a cloud pipeline scaling to 1,000+ cans, streaming MQTT through AWS IoT Core, Kinesis Firehose, and S3 with parallel DynamoDB writes, served to a React/Next.js app with live video and classifications.
- Ran large-scale analytics by linking S3 to a Databricks notebook, scheduling XGBoost models in a cloud cron job to predict environmental impact.

KLMathPrep | *React, Next.js, TypeScript, Python, AWS (Amplify, Lambda, SES, Cognito)* March 2026 – Present

- Built and deployed a full-stack AWS web app for my math tutoring business, handling notes, authentication, student data, scheduling, and automated reminders.
- Developed the React/Next.js front end with live reads of student sign-ups, schedules, and progress.
- Wrote Python Lambda functions triggered by EventBridge to send SES confirmation, cancellation, and reminder emails before each appointment.

UCSD Smart Analyst | *Python, React, Next.js, PostgreSQL (Neon), Plotly, OpenAI API* April 2026 – June 2026

- Designed a PostgreSQL-integrated AI agent for head coaches Spencer McLauclin and Jimmy Lundgren, delivering team-specific stats and visualizations general-purpose LLMs cannot match.
- Directed an OpenAI agent to collect VolleyMetrics data via the UCSD team portal, then clean, engineer, and load it into a unified Neon PostgreSQL database.
- Equipped the agent with custom Python tools for direct SQL querying and data processing, plus schema introspection and a query-correctness feedback loop to validate results before returning them to coaches.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL, JavaScript, TypeScript, HTML/CSS, R

Frameworks: React, Next.js, Node.js, FastAPI, JUnit

Cloud & Data: AWS (IoT Core, Lambda, S3, Kinesis, DynamoDB, SES, Cognito, Amplify), Databricks, PostgreSQL (Neon), MQTT, OpenAI API

Developer Tools: Git, Docker, Linux, Vercel, Tableau, VS Code, PyCharm, IntelliJ

Libraries: pandas, NumPy, Matplotlib, seaborn, Plotly, scikit-learn, XGBoost, PyTorch

Certifications: AWS Certified Solutions Architect – Associate