

KARTHIK KANDASWAMY

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EDUCATION

Rensselaer Polytechnic Institute (RPI) | Troy, NY

Expected May 2029

Dual Major: B.S. Computer Science & B.S. Electrical and Computer Systems Engineering

Relevant Coursework: Data Structures (C++), Applied Quantum Optimization, Multivariable Calculus

Awards: Rensselaer Leadership Award

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++, Java, SQL, MATLAB

ML / Data: TensorFlow/Keras, PyTorch, scikit-learn, NumPy, Pandas, MediaPipe, Qiskit, Evolutionary Algorithms

Web / Cloud: Next.js, React, Node.js, FastAPI, PostgreSQL, Prisma, AWS (IAM, S3), Terraform, Vercel AI SDK

Tools: Git, Linux/Unix, Jupyter, Excel (Financial Modeling), BQPhy Platform

PROJECTS

Dynamic ASL Recognition System | Lead ML & Data Pipeline Engineer

Spring 2026

- Built a MediaPipe pipeline to convert WLASL videos into standardized 30-frame 3D kinematic tensors for training.
- Trained a time-series Transformer in TensorFlow/Keras for dynamic gesture classification; deployed a lightweight landmark model for real-time API/mobile inference.
- Produced and distributed the foundational NumPy dataset to enable team benchmarking against 1D CNN and Video Swin Transformer baselines.
- Implemented sequence standardization (padding/masking) and evaluation scripts to analyze model errors across gesture classes.

Hybrid Quantum-Classical Image Classifier | Researcher & Developer

Fall 2025

- Built a hybrid CNN with a custom Gray-code-decoding layer; optimized non-differentiable parameters using a genetic algorithm.
- Developed a NumPy synthetic-data pipeline (600+ noise-augmented samples) and benchmarked on the BQPhy optimization platform.
- Achieved ~85% accuracy; reduced average loss $\sim 0.61 \rightarrow \sim 0.36$ (best ~ 0.15) with stable convergence across 20+ generations.

Facial Emotion Recognition System | Lead Developer

2023 – 2024

- Developed a CNN/MLP emotion classifier (70% validation on 30k images) and presented at the Synopsys Science Fair (Spring 2024).
- Iterated on preprocessing and validation strategy to improve generalization; packaged results into a clear technical write-up and demo.

EXPERIENCE

Loxe AI | Founder & Software Engineer | San Jose, CA

Spring 2026 – Present

- Built and deployed a B2B SaaS platform for automated SOC 2 compliance (Next.js/TypeScript/Prisma) plus a Python AWS scanning engine.
- Engineered an AI security analyst (Vercel AI SDK + GPT-4o) that evaluates infra risk and streams Terraform remediation; closed a paid pilot.
- Designed Prisma/PostgreSQL schema and shipped full-stack features for onboarding, scanning workflows, and compliance reporting.

Numentica | AI Solutions Intern | Remote / India

Summer 2024

- Scoped AI customer-experience solutions for enterprise clients; performed feasibility analysis and presented recommendations to leadership.
- Built lightweight prototypes and demo workflows to communicate technical feasibility and implementation tradeoffs to stakeholders.

Circle of Giving | Web Manager & Tutor | Morgan Hill, CA

Spring 2023

- Maintained nonprofit website and provided weekly math/logic tutoring; created individualized learning plans.
- Explained concepts step-by-step and tracked student progress over time to reinforce confidence and independent problem solving.

LEADERSHIP & ACTIVITIES

RPI Ski and Snowboard Club | Board Member | Troy, NY

Fall 2025 – Present

- Coordinate trips serving 200+ members; support vendor negotiations and safety/budget compliance.
- Manage member communications and on-trip logistics to ensure smooth execution and consistent attendance.

M.E.T.ia Program (UC Berkeley) | Team Lead

Summer 2023

- Led a cross-functional team to build a sustainable product business plan; won 1st Place in the Shark Tank Pitch Competition.
- Created the pitch narrative and financial model (unit economics and pricing) and presented to judges under time constraints.