RISHI ATHAVALE

Berkeley, CA | 703-927-8738 | rishi_athavale@berkeley.edu | LinkedIn | Google Scholar | GitHub

EDUCATION

University of California, Berkeley | Berkeley, CA | May 2027 | B.S. in Electrical Engineering & Computer Science | GPA: 4.0

- Affiliations: Berkeley AI Research; Machine Learning @ Berkeley (consulting, research, & education non-profit)
- Coursework: Natural Language Processing, Optimization Models in Engineering, Discrete Math & Probability Theory

Rock Ridge High School & Academies of Loudoun | Ashburn, VA | June 2024 | Salutatorian | GPA: 4.88

PROFESSIONAL EXPERIENCE

Drive Powerline, Machine Learning Engineering Intern — Berkeley, CA | *May – Aug 2025*

- Built novel foundation model for cross-region Australian energy market predictive signaling & volatility forecasting across multi-factor time-series attributes (demand, solar PV, price elasticity, forward price forecasts) to optimize trading strategy
- Developed and deployed price spike forecasting model that boosted performance from F1 score 0.4 → 0.61, improving early identification of critical $1000+ events critical for risk management and trading strategy
- Built and deployed internal optimization software suite to reduce AI model development cycle from 10+ days to <1 day

Berkeley AI Research, Machine Learning Researcher — Berkeley, CA | *Apr 2025 – Present*

- Developing web agents to analyze, navigate, and interact with websites (Reddit, GitLab, e-commerce sites, etc)
- Quantifying epistemic uncertainty of implicit neural representations on tomographic missing wedge problems

Machine Learning @ Berkeley, Machine Learning Consultant — Berkeley, CA | *Sept 2024 – Present*

- Lectured for 40 students as lead student instructor for Berkeley Deep Learning for Computer Vision course (CS198-126)
- Leading new high school AI competition to expand STEM education access for 40-60 underrepresented minority students
- Project manager and lead engineer for team of 6 developing AI image search engine for The Guardian; designed novel agentic search method using LLM-generated metadata and OpenCLIP embeddings using HuggingFace & Qwen2.5

Howard Hughes Medical Institute, Research Intern — Ashburn, VA | *Jun 2023 – Aug 2024*

- Designed ML-powered microscope for 3D snapshot microscopy on parallel GPUs in the Turaga Lab at Janelia Research Campus; developed a depth-adaptable phase mask for shape-dynamic imaging using Jax/Flax and meta-learning
- Built demos & computer generated holography features for Chromatix (Jax-based optics library w/ multi-GPU support)
- Created transformer-based neural holography algorithm to turn spot coordinates into holograms for optogenetics; increased accuracy of generated holograms from 60% to 77%

Vytal.ai, Founding Machine Learning Engineer — McLean, VA | *Nov 2021 – Jul 2024*

- Led development of an eye-tracking algorithm with less than 2 degree error using AWS EC2, MediaPipe, and PyTorch to identify biometrics for neurological diagnosis at a medical-AI startup

PROJECTS & RESEARCH

ALLNet: Hybrid CNN to Improve Diagnosis of Acute Lymphocytic Leukemia (ALL) in White Blood Cells *(December 2021)*

- Developed novel hybrid CNN with Python & TensorFlow/Keras to diagnose Acute Lymphocytic Leukemia from white blood cell images with 92% accuracy; published in 2021 IEEE Intl. Conf. on Bioinformatics & Biomedicine (BIBM) **(4 citations)**

Gradient Boosting and Minimum Redundancy Maximum Relevance (mRMR) Feature Selection for Diagnosis of Parkinson's Disease Through Patient Audio Data *(October 2022)*

- Developed Gradient Boosting model using SciKit Learn to diagnose Parkinson's Disease from patient audio data with 90% accuracy; published in Future Technologies Conference (FTC)

One Eye is All You Need: Lightweight Ensembles for Gaze Estimation with Single Encoders *(November 2022)*

- Created a SqueezeNet model using PyTorch & AWS to track eye movement from video using a single-eye
- Achieved 1.4cm error on two eyes & 2.3cm on single eye (similar results to MIT & Google research) **(12 citations)**

SKILLS

Programming Languages	Python, MATLAB, C++/C, Java, JavaScript
Machine Learning Algorithms	ANNs, CNNs, ViTs, Transformers/Attention, Neural Fields, Diffusion, AutoEncoders, RNNs, kNNs, Gradient Boosting, INRs/NeRFs, DQNs, PPO
Deep Learning Libraries	JAX, Flax, PyTorch, TensorFlow, Keras, SciKit Learn, NumPy, Pandas
Amazon Web Services (AWS)	EC2 Instances, S3 Storage for large-scale ML
Other Technologies	Parallel GPU Training, Jupyter Notebook, Spyder, Anaconda, Chromatix, React