Akshay Trikha

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Experience

QuantumScape 09/21 – Present
Machine Learning Engineer, Office of the CTO *San Francisco, CA*

- Building and buying LLM-related software. Led company-wide effort to create an "AI automation wishlist".
- Trained and deployed PyTorch vision models for manufacturing defect detection, serving 1M inferences/month.
- Created a segmentation model that runs on >60 camera systems at the company (tinyurl.com/mask-finding).

Sandia National Laboratories 09/20 – 05/21
Researcher, 9-person team *San Francisco, CA*

- Investigated link between diameter of ferroelectric barium titanate nanoparticles and dielectric constant.
- Developed a Python image-processing pipeline using OpenCV, NumPy, and Matplotlib to extract particle sizes and distributions from TEM images, optimized runtime by 25x using Numba.
- Presented at Materials Research Society '21 Spring Meeting & published in MRS Advances (tinyurl.com/sandia-paper).

AMISTAD Lab 05/19 – 12/19
Researcher, 6-person team *Claremont, CA*

- Explored why machine learning works from an information theory and search perspective.
- Co-authored *The Bias-Expressivity Tradeoff*, won best paper award at ICAART2020 in Valletta, Malta.
- Co-authored *The Futility of Bias-Free Learning*, presented at AI2019 in Adelaide, Australia (tinyurl.com/amistad-futility).

Projects

Ducky | *JavaScript, Electron* 05/25
Berkeley, CA

- Created a voice-based AI pair programmer for debugging (duckydev.ai).
- Top 10% of applicants to Y Combinator's Summer 2025 batch (not accepted).

Scaling Laws for Interatomic Potentials | *PyTorch* 03/24 – 05/25
Berkeley, CA

- Investigated scaling laws comparing transformers and EquiformerV2 for learning physics from data.
- Trained with 8 GPUs up to 10M parameter models on 1M datapoints from Open Materials 2024 dataset.
- Wrote about findings here (tinyurl.com/materials-scaling).

Neural Style Transfer | *JavaScript, React, HTML/CSS* 07/21
San Francisco, CA

- Created a neural style transfer web app generating stylized images from webcam input in real-time using a pretrained TensorFlow.js model (styletransfer.art).

GPT-2 Trump | *Reimplemented with Hugging Face Transformers* 12/20
San Francisco, CA

- Finetuned GPT-2 774M using ∼56,500 Trump tweets to understand model's capability for persuasion. (tinyurl.com/gpt2-trump)

Skills

Technical: Python (PyTorch, TensorFlow, NumPy, SciPy, Scikit-learn, Pandas, OpenCV), C++, C, JavaScript (TensorFlow.js), React, Vue, SQL, HTML/CSS, Java

Natural Language: Hindi (fluent), Mandarin (conversational), Sanskrit (learning), English (fluent)

Education

University of California, Berkeley 08/23 – 05/25
Master of Engineering in Materials Science & Engineering *Berkeley, CA*

Harvey Mudd College 08/17 – 05/21
Bachelor of Science in Computer Science *Claremont, CA*