

Kunal Kapoor

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA

GPA: 3.84

Bachelor of Science in Computer Science, Concentration in Machine Learning

Honors & Awards: USAMO Qualifier, Nationally Ranked #5 Policy Debate Team, MA State Policy Debate Champion

Coursework: Theoretical Statistics, Deep Reinforcement Learning, Distributed Systems, Deep Learning, Parallel Computing, Generative AI, ML with Large Datasets, Machine Learning, Algorithms for Big Data, Computer Security, Computer Systems, Advanced Algorithms, Probability Theory, Linear Algebra, Discrete Mathematics, Game Theory

TECHNICAL SKILLS AND PROJECTS

Technical Skills: Python, C, SML, PyTorch, CUDA, Git, Spark, Dataflow, Apache Beam

Projects

- **Speech Recognition:** Implemented & trained transformer-based LAS model for speech recognition tasks.
- **Diffusion Policy:** Implemented & evaluated a transformer-based diffusion policy for robotic imitation learning that generates multi-step action sequences by iteratively denoising random trajectories conditioned on state history.
- **Stock Prediction:** Implemented a diffusion VAE for multi-step stock return forecasting, integrating financial data with sentiment embeddings from 80K+ tweets to improve prediction accuracy.

PROFESSIONAL EXPERIENCE

Stealth Startup | Boston, MA

Jan 2025 – Nov 2025

Founding Engineer

- Built RL environment and training pipeline using ART (Agent Reinforcement Trainer) to optimize conversational LLMs for voice agent instruction-following, demonstrating improved task completion on internal evaluations.
- Developed prompt optimization framework using DSPy to automatically tune system prompts for judges, personas, and agents, outperforming manual baselines and enabling rapid environment adaptation to customer-specific requirements.
- Architected end-to-end voice agent testing platform orchestrating dynamically generated synthetic caller via Telnyx to exhaustively stress-test production agents across adversarial scenarios, outputting quality and task completion metrics.

Moloco | Redwood City, CA

May 2024 – Aug 2024

Machine Learning Engineering Intern

- Conducted model distillation for the ML-DSP team's revenue model by systematically modifying training data, conducting rigorous experiments over hyperparameters/architecture, and leveraging academic research insights. Wrote Apache Airflow pipeline to automate distillation process. Projected \$100K USD reduction in monthly serving costs.
- Wrote GCP Dataflow job to generically augment training data for model distillation. Used by teams throughout ML org.

Apple | Sunnyvale, CA

May 2023 – Aug 2023

Machine Learning Engineering Intern

- Improved mechanism to automatically detect performance anomalies using a system of cascaded Isolation Forest models, automatically adapting to changing performance characteristics.
- Developed a plug-in for a native testing app to efficiently calculate correlations across performance metrics. Helped engineers quickly discover bugs via examining abnormal correlations.
- Trained a convolutional auto-encoder network on performance data to analyze new traces for the Apple Vision Pro.

CMU CSD | Pittsburgh, PA

Dec 2023 – Jun 2024

Researcher

- Working on theoretically understanding fine-tuning, overparameterization, and catastrophic forgetting in neural networks.

CMU MLD | Pittsburgh, PA

Aug 2024 – Present

Teaching Assistant

- TA for Mathematical & Computational Foundations for ML. Responsible for hosting OH, leading recitation, and grading.

MIT PRIMES | Cambridge, MA

Dec 2020 – Apr 2022

Researcher

- Advanced the Trust Graph approach to create a more fault-tolerant consensus protocol, specifically examining a dynamic model. Gave a presentation to MIT CS professor Sridhar Devadas and other researchers on my work.
- Justified correctness in report accepted by the American Mathematical Society for annual Joint Mathematics Meeting.

Interests/Fun Facts: Premier League, Tennis, Gym, Effective Altruism, NFL, Policy Debate, Chess, Formula One, Poker