Amit Kiran Rege

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ML Researcher · Phonely · PhD, Computer Science, CU Boulder

ML Researcher at Phonely, training and deploying voice agents for customers handling millions of calls a month. Research in Reinforcement Learning and Human-AI collaboration: applying RL to LLM post-training, foundational multi-agent bandits, and the mathematics of interpretability. Published at AISTATS, L4DC (oral), IEEE CDC, and Physical Review Applied; 6 papers currently under submission.

RESEARCH

Reinforcement Learning Theory · Multi-Agent Bandits · Data Attribution for Interactive Learning · AI Interpretability & Safety · Generative Models

SELECTED PUBLICATIONS

- **Learning from Local Walks on Dynamic Graphs with Bandit Feedback** — IEEE CDC 2026
- **Multi-Agent Lipschitz Bandits** — AISTATS 2026
- **Flickering Multi-Armed Bandits** — L4DC 2026 **[Oral]**
- **A Unified Framework for Locality in Scalable MARL** — L4DC 2026
- **Incentivized Lipschitz Bandits** — IEEE CDC 2025
- **Where Did Your Model Learn That? — Label-free Influence for SSL** — arXiv 2024
- **Hamiltonian Learning using Machine Learning** — Physical Review Applied 2024
- *+ 6 papers under submission: RL attribution theory, oracle separations for RL, interpretability auditability, KL-regularized agent monitorability*

OPEN SOURCE PROJECTS

tinygrad-classroom	Interactive autograd: scalar neuron → backprop, built for teaching	`amitrege/tinygrad-classroom`
NeuroSteer	Stepwise activation steering library for Llama-style decoder LLMs	`amitrege/NeuroSteer`
tracemap	Training-data influence with query heatmaps for image classifiers	`amitrege/tracemap`
rl-attr-code	Exact RL data attribution distinguishing replay vs. interventional effects	`amitrege/rl-attr-code`

EXPERIENCE

ML Researcher — Phonely — *Sep 2026 – Present*

- Train and deploy voice agents to customers handling millions of calls a month

Investment Associate — Deming Center Venture Fund, CU Boulder — *Apr 2025 – May 2026*

- Source and evaluate early-stage deep-tech companies for CU Boulder's student venture fund
- Led investment in Great Sky (AI chip startup); closed at fund's highest valuation ever ($50M)

Student Engineer — DARPA Subterranean Challenge, Team MARBLE — *Summer 2019*

- Built object detection & localization pipeline for robots navigating lightless underground mines
- Placed **4th of 11 teams** worldwide against NASA JPL, CMU, and UPenn

Research Intern — École Normale Supérieure (advised by Prof. Cezara Dragoi) — *Feb – Jul 2018*

- Formally verified round-based synchronicity of Raft and Viewstamp consensus protocols

EDUCATION

PhD, Computer Science · University of Colorado Boulder — 2020–2026

MS, Computer Science · University of Colorado Boulder — GPA: 4.0/4.0 · 2020

BE (Hons.), Computer Science · BITS Pilani–Goa — 2018

SKILLS & TOOLS

Python · PyTorch · JAX · NumPy · C++ | RL Theory · Bandits · AI Interpretability · Generative Models · Formal Verification · LLM Fine-tuning

TALKS & INDUSTRY ENGAGEMENT

LLMs from Scratch — Spencer Fane LLP (Industry Talk) — Nov 2025

Frontiers of Generative AI — Ensemble Innovation Ventures — Jan 2026

Theoretical Machine Learning — KOA 94.1 FM iHeart Radio — Jan 2025

Guest Lecturer: CSCI 7000 (Adv. ML), CSCI 4622 (ML), CSCI 5802 (Data Science)