Tanya G. Roosta

AI / Machine Learning Executive Leader

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Personal Website

AI/ML executive leader with 15+ years of experience translating advanced research into production systems across generative AI, foundation models, agentic AI, physical AI, NLP, reinforcement learning, and large-scale ML platforms.

AI Leadership Highlights

- **AMD:** Lead cross-functional AI strategy across physical AI, agentic AI, kernel optimization, and platform programs.
- **Amazon:** Directed applied science teams building GenAI, foundation models, RL, and multi-agent systems for Shopping and Alexa.
- **Impact:** Own roadmaps, evaluation, optimization, and executive alignment to move research into production.

Work Experience

Director of AI Feb 2026 – Present
AMD (AI Brain Org)

- Lead org-wide AI strategy and execution across engineering, research, and product teams.
- Set roadmap direction for physical AI, including embodied intelligence, perception, planning, and control.
- Own agentic AI kernel optimization strategy to improve inference latency, throughput, and hardware efficiency on AMD platforms.
- Partner with senior leaders to prioritize investments, de-risk delivery, and accelerate AMD's AI roadmap.

Senior Applied Science Manager Jun 2019 – Feb 2026

- Led applied science and ML engineering teams developing self-supervised learning, GenAI, RL, and multi-agent systems for Amazon Shopping and Alexa.
- Owned product and research roadmaps, partnering with product and engineering leaders from prototype through production launch.
- Built and deployed AI foundation models through training, benchmarking, tuning, and optimization.
- Oversaw automation frameworks for model integration, evaluation, and performance testing across AI workloads.
- Communicated scientific findings, tradeoffs, and recommendations to technical, product, and executive stakeholders.

Part-Time Lecturer, Master of Information and Data Science Jul 2022 – Present

Earlier Leadership & Technical Experience

Lead Machine Learning Scientist, SumUp Analytics Mar 2018 – May 2019

- Led applied NLP research and product delivery for fintech analytics, translating topic modeling, summarization, recommendation, sentiment analysis, and streaming text analytics into customer-facing features.
- Managed scientists and engineers across research, backend services, AWS-hosted APIs, and client proof-of-concept delivery.

Director of Data Science and Machine Learning, Moody's Analytics May 2014 – Mar 2018

- Led quantitative modeling teams and client engagements across credit risk, commercial portfolios, mortgages, real estate, and counterparty risk.
- Translated complex statistical and financial models into executive-ready recommendations and regulated financial services products.

Senior Quantitative Analyst, Federal Reserve Bank of San Francisco Jun 2012 – Apr 2014

- Served as lead quantitative analyst for supervisory examinations of major bank holding companies, applying data cleaning, time-series modeling, and advanced analytics to complex regulatory datasets.

Senior Quantitative Researcher, Allianz Global Investors Capital Oct 2010 – May 2012

- Built emerging-market risk models and portfolio analytics, including a minimum-variance strategy that contributed to the launch of the AllianzGI U.S. Managed Volatility Fund.

Software Engineer, Cisco Systems Aug 2008 – Feb 2010

- Developed production C software and systems-level functionality for Cisco's Group Encrypted Transport VPN and SmartGrid initiatives.

Core Skills

AI/ML: GenAI, foundation models, agentic AI, RL, multi-agent systems, physical AI, NLP, model evaluation, production ML.

Technical: Deep learning, statistical modeling, quantitative risk, large-scale analytics, optimization, experimentation, benchmarking.

Platforms: Python, PyTorch, TensorFlow, Hugging Face, AWS, vector databases, Java, C/C++, R, MATLAB, SAS, SQL, Tableau.

Leadership: Strategy, roadmaps, team building, cross-functional execution, stakeholder communication, agile delivery, quality assurance.

Education

- **University of California, Berkeley:** Ph.D. EECS; M.S. EECS; M.A. Statistics; B.S. EECS.
- **Haas School of Business, UC Berkeley:** M.S. Financial Engineering.

Selected Credentials

- **Awards:** NSF Graduate Research Fellowship; Best Student Paper Award, ICASSP.
- **Publications:** 58 publications with more than 2,128 citations.
- **Patents:** 6 patents and filings spanning language model training, machine learning model updates, and secure networking systems.