Mohit Agarwal

Mountain View, CA, USA
www.agmohit.com
Email: me.agmohit@gmail.com
Phone: +1-404-953-8538

Summary Research Engineer with 5+ years of industry experience in ML, LLMs evaluation, and post-training (SFT/RL). Proven track record of leading the foundation models development, scalable LLM evaluation frameworks, RL pipelines, graph neural networks, and human-in-the-loop systems at scale.

Education

Georgia Institute of Technology Aug 2014 – Dec 2020
MS and PhD in Computer Engineering, Minor in Computer Science, GPA: 4.0/4.0
Thesis: On The Interplay between Brain-Computer Interfaces and Machine Learning Algorithms
Advisor: Prof. Raghupathy Sivakumar

Indian Institute of Technology Kanpur Jul 2010 – May 2014
Bachelors in Electrical Engineering, GPA: 8.7/10.0

Work Experience

Google – Research Engineer Feb 2023 – Present
LLMs, Post-Training & Eval Frameworks at Gemini GenAI and Google Research

- ***LLM Post-Training, Evaluation & Strategy:*** Led the end-to-end RLHF pipeline for Google's AI Mode (serving ∼100M MAU), achieving a 2.99% absolute reduction in severe factual errors.
- Spearheaded multi-turn SFT/RL recipes for Gemini (XS/Flash/Pro). Distilled reasoning traces over hard simulation journeys, delivering massive out-of-distribution wins on long-context benchmarks including LOFT 1M (+10.39%), Culer 1M (+8.55%), and MRCR 128K (+3.9%).
- Architected the core multi-turn evaluation infrastructure, deploying MTBench (a deterministic state-tracking engine for long-horizon conversations) and calibrated AutoRaters (∼82.8% Macro F1). Established the definitive organizational benchmarks for conversational losses, replacing unscalable human grading.
- Directed cross-functional strike teams to mitigate P0 regressions (isolating a 5.6% Search-On accuracy drop) and drove executive strategy by executing foundational headroom analyses that evolved the unified loss taxonomy and guided future training paradigms.
- ***Geospatial ML & Climate:*** Developed the Graph Neural Network-based Population Dynamics Foundation Model (PDFM) for zero-shot geospatial reasoning. Triggered 100+ internal product integrations (Google Cloud, Ads, Geo) and external adoption by major enterprises (WPP, CARTO) and NGOs (World Bank, UN). First author, lead patent inventor. [arXiv] [Blog]
- Engineered scalable climate data pipelines (Cool Roofs, Shade Maps) launched across 15 global cities (27M+ population), enabling municipal partners to secure climate funding and shaping core Google Maps routing features. [Google Blog]

Goldman Sachs – Quantitative Strategist Feb 2021 – Feb 2023
Knowledge Graph, Data Science, Financial Research at Asset Management Division

- Built an Investment Research Platform covering 1.8M+ companies and 10M+ contacts from multiple data sources to surface investment opportunities and accelerate portfolio value creation.
- Led the design and development of a Knowledge Graph to derive insights from entity connections with applications in warm introductions, value acceleration, talent management, and graph-based search.

Georgia Institute of Technology – Graduate Research Assistant Aug 2014 – Dec 2020
Brain-Computer Interfaces, Reinforcement Learning under Prof. Raghupathy Sivakumar

- Prototyped an end-to-end Human-in-the-Loop system to accelerate RL algorithms via implicit EEG-based feedback, achieving 1.52x training acceleration on DQN. Designed IRB-approved experiments for 25+ users across 5 environments. [Neurocomputing 2021] [RL4G, AAAI 2020]
- Proposed self-supervised eye-blink detection algorithms (98% accuracy) for low-power BCI wearables, achieving 2.7x battery life improvement. Implemented on embedded hardware (Arduino, C++). [ACM CHI 2020] [Allerton 2019]

Patent

Geospatial Inference Using Graph-Based Models
U.S. Patent Application No. 19/385,952, filed November 11, 2025. Lead inventor.

Selected Publications

- **M. Agarwal***, M. Sun*, . . . , S. Shetty, G. Prasad, "General Geospatial Inference with a Population Dynamics Foundation Model", *arXiv 2024, under review at Nature Medicine*. [arXiv] [Blog]
- **M. Agarwal***, D. Xu*, E. Gupta, F. Fekri, R. Sivakumar, "Accelerating Reinforcement Learning using EEG-based implicit human feedback", *Neurocomputing 2021*.
- **M. Agarwal**, R. Sivakumar, "Charge for a whole day: Extending Battery Life for BCI Wearables using a Lightweight Wake-Up Command", *ACM CHI 2020*.
- **M. Agarwal**, R. Sivakumar, "BLINK: A Fully Automated Unsupervised Algorithm for Eye-Blink Detection in EEG Signals", *Allerton 2019*.
- Y. Jian et al. (incl. **M. Agarwal**), "Algorithms for addressing line-of-sight issues in mmWave WiFi networks using access point mobility", *JPDC 2022*.
- Full list at [Google Scholar]

Awards & Achievements

- **Semi-Finalist** of Qualcomm Innovation Fellowship 2018, USA.
- Ranked **2nd** in worldwide Melanoma Detection Challenge (2016) organized by ISBI.
- Awarded NVIDIA Academic Hardware Grant 2018.

Technical Skills

Languages: Python, C/C++, SQL **ML/AI:** TensorFlow, JAX, PyTorch, LLM Post-Training (SFT, RLHF), GNNs
Data & Infra: Distributed Systems, Data Pipelines **Databases:** MongoDB, ElasticSearch, Neo4J

Internships

Apple, USA – Wireless Technologies Group Summer 2018
Wireless Software Development

- Developed a system-level discrete event simulator in C++ to characterize and optimize parameters of an in-house radio-access technology.

Lawrence Livermore National Laboratory – CASC Summer 2017
Machine Learning Research

- Automated Pair-Correlation Function (PCF) estimation for arbitrary point clouds using ML (traditionally requiring manual tuning or multi-day MD simulation).

Cisco Systems, Inc. USA Summer 2016
Deep Learning Research

- Designed stateful DNNs using LSTMs in TensorFlow for action recognition in video clips (+25% accuracy over stateless models).

Grants

NSF Award #1837369 ($500,000, PI: Prof. Sivakumar, Jan 2019 – Dec 2021): Co-authored the awarded proposal with significant technical contribution for multi-human assisted learning using EEG-based potentials.

Professional Service

PC Member	ICWSM 2020
Session Chair	Allerton 2019: Statistical and Signal Processing
Reviewer	Neurocomputing ('22–'26), IMWUT ('19, '20, '22, '23), CogSci ('20, '23–'26), ICWSM ('19, '20), UIST '26, JPDC '25, ACM CHI Play '22, Biomedical Signal Processing and Control '22, ACM CHI '20, ACI '19, MobileHCI '19, AutomotiveUI '19, IEEE Trans. Mobile Computing ('17–'19)