

Muhammad Ali, PhD


Bellevue, WA


www.m-ali.org

Experience

Seattle, WA Aug 2026–Present	Airbnb Machine Learning Engineer
Seattle, WA May 2025–Aug 2026	Amazon Applied Scientist Built LLM-as-Judge evaluation pipelines for agentic fraud detection—designed agent and eval harness end-to-end, calibrated against professional analysts (Cohen’s Kappa 0.7), delivered 90% accuracy on VP-facing reports. Designed multi-agent systems for risk research grounded in large-scale regulatory corpora
Cambridge, MA Aug 2024–May 2025	Apple Research Scientist Designed evaluation frameworks for LLM performance in Apple Music, TV and App Store. Built synthetic benchmarks, evaluation datasets, and designed human evaluations protocols. Partnered with product teams to translate requirements into research projects.
Boston, MA Nov 2023–Jul 2024	Northeastern University Research Scientist Evaluated commercial LLMs for factuality failures including hallucinations and knowledge gaps; developed evaluation benchmarks, and built data collection pipelines at scale.
Sep 2018–Oct 2023	PhD Candidate Owned multiple research projects on evaluating algorithmic bias in ML systems like advertising. Designed and implemented large-scale experiment infrastructure, worked with real users, ran statistical analyses, and presented results in top-tier papers. <i>Press coverage:</i> WIRED , MIT Technology Review , Vox , The Economist
Burlington, MA May 2022–Aug 2022	Oracle Labs Research Intern, Machine Learning Pre-trained and fine-tuned transformer models (BERT) on large-scale corpora (CommonCrawl, Wikipedia) across multiple GPUs. Developed novel methods for measuring how model behavior changes with scale. First-author arXiv publication .
Hillsboro, OR Aug 2021–Nov 2021	Intel Research Intern, Ethical AI Wrote an automated model card generator using TensorFlow. Built early explainability tools using SHAP and wrote developer-facing notebooks for Intel AI’s open source model repository. GitHub: intel/intel-xai-tools .
Saarbrücken, Germany Jun 2017–Aug 2018	Max Planck Institute for Software Systems Research Assistant Research in ML fairness and using advertising data for demography. Published work at FAccT 2018.

Skills [\[StackOverflow\]](#)

Technical	Python (PyTorch, TensorFlow, HuggingFace), C/C++, CUDA, SQL, Spark, Scala, Go, Java, JavaScript/TypeScript, Docker, Git, Unix etc.
Research	large language models, natural language processing, information retrieval, knowledge grounding, model evaluation, responsible AI, experiment design, large-scale data collection, writing, communication

Education

2018 – 2023 Boston, MA	Ph.D., Northeastern University Computer Science; Advisor: Alan Mislove Outstanding Graduate Student in Research Award Selected Coursework: machine learning, parallel data processing, distributed systems
2016 – 2018 Saarbrücken, Germany	M.Sc., Saarland University Computer Science Selected Coursework: information retrieval, data mining and matrices, social network analysis, natural language processing, probabilistic graphical models
2011 – 2015 Lahore, Pakistan	B.S., National University of Computer & Emerging Sciences Computer Science

Selected Publications [\[Google Scholar\]](#)

IUI ‘25	Unequal Opportunities: Examining the Bias in Geographical Recommendations by Large Language Models Shiran Dudy, Thulasi Tholeti, Resmi Ramachandranpillai, Muhammad Ali, Toby Jia-Jun Li, Ricardo Baeza-Yates Honorable Mention
arXiv (‘24)	Understanding the Interplay of Scale, Data, and Bias in Language Models: a Case Study with BERT Muhammad Ali, Swetasudha Panda, Qinlan Shen, Michael Wick, Ari Kobren
USENIX Security ‘23	Problematic Advertising and its Disparate Exposure on Facebook Muhammad Ali, Angelica Goetzen, Alan Mislove, Elissa Redmiles, Piotr Sapiezynski
WSDM ‘21	Ad Delivery Algorithms: The Hidden Arbiters of Political Messaging Muhammad Ali*, Piotr Sapiezynski*, Aleksandra Korolova, Alan Mislove, Aaron Rieke
CSCW ‘19	Discrimination through Optimization: How Facebook’s ad delivery can lead to skewed outcomes Muhammad Ali*, Piotr Sapiezynski*, Miranda Bogen, Aleksandra Korolova, Alan Mislove, Aaron Rieke Diversity & Inclusion Award + Honorable Mention
FAccT ‘18	Potential for Discrimination in Online Targeted Advertising Till Speicher, Muhammad Ali, Giridhari Venkatadri, Filipe Ribeiro, George Arvanitakis, Fabricio Benevenuto, Krishna Gummadi, Patrick Loiseau, Alan Mislove Best Paper Nominee * equal contribution

Service

Program Committee	WWW ‘23; FAccT ‘21–‘24; IC2S2 ‘23–‘26 SoLaR @ NeurIPS ‘24, ‘23; ReGenAI @ CVPR ‘24
External Reviewer	NeurIPS ‘24, ‘23, ‘21; TiFA @ ICML ‘24; FAccT ‘26; CHI ‘25; CSCW ‘23, ‘21, ‘20; PETS ‘22