

Sheikh A. Mannan

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EDUCATION

Colorado State University

Fort Collins, CO

PhD Computer Science | CGPA 4.0/4.0

Jan 2021 – Dec 2025 (Expected)

- Advised by *Dr. Nikhil Krishnaswamy*.
- Research Topics: Applied Machine Learning, Embodiment & Trust in AI, Situated Grounding.
- Relevant Courses: Intro to Machine Learning, Machine Learning, Natural Language Processing, Intro to Distributed Systems, Big Data, Software Product and Process Evaluation, AI/ML Product Management.

Lahore University of Management Sciences

Lahore, Pakistan

BS Computer Science | CGPA 3.28/4.0

Aug 2016 – June 2020

- Relevant Courses: Distributed Systems, Networks Security, Software Engineering, Programming Languages, Network Centric Computing, Advanced Programming, Algorithms, Data Structures.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C/C++, Golang, Dart, SQL

Frameworks: React.js, Next.js, Node.js, JUnit, Jest, Flutter, WordPress

Tools: Git, Docker, GitHub Actions, Selenium, Postman, Code Climate, Zenhub, BeautifulSoup4

Big Data: MapReduce, PySpark, Apache Storm, Hadoop, Horovod

Data Modelling: Pandas, Numpy, PyTorch, Pytorch-lightning, TensorFlow, Hugging Face, Scikit-Learn, Gymnasium, Stable-baselines3, Seaborn, Matplotlib

EXPERIENCE

Software Engineer Intern, ML

May 2024 - August 2024

Meta ~ Marketplace Feed Delivery

Menlo Park, CA

- Led initiatives to improve product delivery and engagement for cold-start and over-delivered product listings by developing new retrieval sources and filters by utilizing existing engagement-based features with new content-based features.
- Conducted multiple rounds of A/B tests - suppression tests for over-delivered products resulted in 1% gain in meaningful list interaction and 0.74% increase in click engagement and utilizing content-based signals for cold-start listings lead to 0.65% gain in meaningful interactions on FB marketplace.

Graduate Research Assistant

Jan 2022 - Present

SIGNAL Lab @ CSU

Fort Collins, CO

- Employed ML techniques to research potential AI aids to help human pilots maintain balance and prevent unrecoverable losses of control in aerospace conditions that lead to spatial disorientation.
- Published 6 papers in domains of embodiment, machine translation, low-resource language modelling, and human agent/computer interaction (COLING, ACL, HCII, ACL, AAAI, HAI).
- Received Best Paper Nomination at Human-Agent Interaction 2024 held in Swansea, UK

Graduate Teaching Assistant

Jan 2021 – December 2024

Colorado State University

Fort Collins, CO

- Courses: CS314 Software Engineering, CS 345 Machine Learning Foundations and Practice, CS455 Intro to Distributed Systems, CS514 Software Product and Process Evaluation
- Held office hours and recitations to assist students understand course content through programming assignments and quizzes, and facilitated grading through the creation of automated scripts.
- Maintain GitHub Action runners for automated build-test workflows and web servers as part of *DevOps* for the Software Engineering course of 140+ students.

PROJECTS

- Evaluating Mutation Testing in Smart Contracts for Ethereum apps** Nov 2023 – Dec 2023
- Evaluated 2 mutation testing tools, SuMo and Vertigo, on open-source Solidity Smart Contracts and found that the mutation score depends on the set of mutation operators, traditional vs language-specific and the original test suite.
- Recommendation System for H&M products** March 2022 – May 2022
- Developed a recommendation system for recommending H&M products to customers based on previous buying preferences. Leveraged categorical and textual features to train a deep-distributed neural network model with *TensorFlow Recommenders* and *Horovod*, and achieved a 94% *Top-5 accuracy*.
- Exploratory Analysis of an Evolving Citation Network** Jan 2022 – Feb 2022
- Performed an analysis of a continuously evolving temporal network with *PySpark* and *Hadoop* to investigate whether fundamental network properties of density and diameter evolve as expected in the citation network.

PUBLICATIONS

- [1] **Bidirectional Human-AI Learning in Real-Time Disoriented Balancing**
Sheikh Mannan and Nikhil Krishnaswamy. In AAAI Demo Program. AAAI. 2025.
- [2] **Combating Spatial Disorientation in a Dynamic Self-Stabilization Task Using AI Assistants**
Sheikh Mannan, Paige Hansen, Vivekanand P. Vimal, Hannah N. Davies, Paul DiZio, and Nikhil Krishnaswamy. In International Conference on Human-Agent Interaction (HAI '24). ACM. 2024.
- [3] **Embodying Human-Like Modes of Balance Control Through Human-in-the-Loop Dyadic Learning**
Sheikh Mannan, Vivekanand P. Vimal, Paul DiZio, and Nikhil Krishnaswamy. In AAAI Spring Symposium: Symposium on Human-Like Learning (HLL). AAAI. 2024. [Link](#)
- [4] **AxomiyaBERTa: A Phonologically-aware Transformer Model for Assamese.**
Abhijnan Nath, *Sheikh Mannan*, and Nikhil Krishnaswamy. In Findings of the Association for Computational Linguistics (Findings of ACL). ACL. 2023
- [5] **Intentional Microgesture Recognition for Extended Human-Computer Interaction.**
Chirag Kandoi, Changsoo Jung*, *Sheikh Mannan**, Hannah VanderHoeven, Quincy Meisman, Nikhil Krishnaswamy and Nathaniel Blanchard. In International Conference on Human-Computer Interaction (HCI). Springer. 2023
- [6] **Where am I and where should I go? Grounding positional and directional labels in a disoriented human balancing task.**
Sheikh Mannan and Nikhil Krishnaswamy. In Conference on (Dis)embodiment. ACL. 2022. [Link](#)

PROFESSIONAL SERVICES

- Reviewer for multiple tracks.** International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING). Turin, Italy. 2024
- Reviewer.** International Journal of Human-Computer Interaction (IJHCI). 2024
- Reviewer.** 9th Workshop on Representation Learning for NLP (RepL4NLP). ACL. 2024

AWARDS

- Recipient of Computer Science Graduate Fellowship,** Colorado State University 2024.
- Graduation with Merit,** Lahore University of Management Sciences, Pakistan 2020.
- Winner of 23rd edition of SOFTEC Programming Competition,** Pakistan 2019.
- Runner Up of IEEE LUMS Coding Guru Programming Competition,** Pakistan 2019.