

Zain Sarwar

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EDUCATION

University of Chicago

PhD in Computer Science

GPA: 3.91

Relevant Coursework: Deep Learning, Machine Learning, Operating Systems, NLP, Algorithms & Distributed systems

Chicago, IL

Aug 2025(Expected)

Lahore University of Management Sciences (LUMS)

BSc in Computer Science & Economics

GPA: 3.75

Honors: Dean's Honor List

Lahore, Pakistan

May 2020

PROFESSIONAL EXPERIENCE

University of Chicago

Research Assistant, SAND Lab

Chicago, IL

September 2021 – Present

- Invented an algorithmic framework for valuing large private datasets which enables data sharing for machine learning between organizations in a cost-effective and privacy-preserving manner
- Designed a retrieval based language model which leverages external databases resulting in improved performance at a fractional cost of standard language models
- Engineered state-of-the-art techniques for detecting fake news generated from Large Language Models using graph neural networks
- Created a voice privacy protection tool which prevents machine learning models from cloning an individual's voice to protect against identity theft using a voice anonymizing neural model
- Implemented the first ever end-to-end generalizable video-based keystroke inference attack which uses a novel self-supervised learning algorithm to connect classical machine learning with deep neural networks and has applications in VR and hand tracking systems

PosterMyWall

Software Engineer

Lahore, Pakistan

May 2020 - Oct 2020

- Formulated a new SEO strategy to adapt to search engines rapidly using machine learning for site ranking
- Fixed critical site issues which decreased website bounce rate by 4% and improved click-through rate by 7%
- Integrated Generative AI into the production system which generated new content in real time based on search queries which solved a long standing problem of missing relevant content
- Automated data analysis related to keyword optimization which eliminated 20+ hours of manual research per month

SmartPrep

SAT Tutor

Lahore, Pakistan

Dec 2018 - Dec 2019

- Coached 300+ high school students across different schools to help them ace their SAT exams
- Led efforts to revamp the curriculum and pedagogical strategy to improve learning outcomes for students

PUBLICATIONS

[Towards a General Video-based Keystroke Inference Attack](#)

Zhuolin Yang, Yuxin Chen, **Zain Sarwar**, Hadleigh Schwartz, Ben Y. Zhao, Haitao Zheng

USENIX Security Anaheim CA, August 2023

[Deepfake Text Detection: Limitations and Opportunities](#)

Jiameng Pu, **Zain Sarwar**, Sifat Muhammad Abdullah, Abdullah Rehman, Mobin Javed, and Bimal Viswanath

IEEE S&P (Oakland) 2023

TECHNICAL SKILLS

Languages: Python, C++, Java, JavaScript, TypeScript, Go, Haskell, Matlab, SQL

Libraries: PyTorch, TensorFlow, OpenCV, scikit-learn, pandas, NumPy, Selenium

Frameworks: Angular, React, Git, Docker, Flask Node.js, Vue, Flutter