Shiza Ali

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Education

Boston University Expected May 2024
PhD in Computer Engineering *CGPA: 3.96/4.00*
- Focus: Applied Machine Learning, Natural Language Processing, Usable Security and Privacy

National University of Computer and Emerging Sciences (NUCES) Sep. 2014 – May 2018
Bachelor of Computer Science *CGPA: 3.82/4.00*
- Magna Cum Laude — 1st Position in a batch of 400 students

Work Experience

Software Engineer Feb. 2019 - Aug. 2019
Educative, Inc *Bellevue, WA (Remote)*
- Produced interactive Data Structure and Algorithm training modules using Python, C++, and HTML/CSS.
- Collaborated with the software development team to implement Docker for the company's website.

Software Engineer Intern Jun. 2017 - Aug. 2017
Mindstorm Studios *Lahore, Pakistan*
- Served as a full-stack developer and deployed HTML5 game online.

Research Experience

Graduate Research Assistant Aug. 2019 - Present
Boston University (SeclaBU) *Boston, MA*
- Developed data-driven machine-learning models to mitigate risks and abusive behavior online.
- Published significant research in leading conferences, including IEEE(S&P), WebSci, CHI, CSCW etc.
- **Awarded Meta Research Ph.D. Fellowship Finalist, 2023**

Graduate Teacher's Fellow Sep. 2020 - May. 2021
Boston University *Boston, MA*
- I conducted labs for Applied Algorithms for Engineers Course (EC330) and worked with a class of 50 students to teach them the core concepts of algorithms and programming in C++.

Research Associate Feb. 2018 - Feb. 2019
Technology for People Initiative Lab, LUMS *Lahore, Pakistan*
- As part of my responsibilities, I mentored new students, managed the website, and led 3 research projects.
- Conducted research in internet measurement, social media algorithm auditing, and web scraping.
- Collaborated with UC Davis doctors to design a machine-learning algorithm that detects tuberculosis using X-ray images and biomarkers.

Projects

Multi-modal Risk Detection Pipeline for Private Instagram Conversations
Published in ACM CSCW'23
- Collected Instagram data from 172 participants using a web-based system and a secure AWS database to store them. I then performed extensive data analysis of over 5 million messages which resulted in 3 publications.
- Implemented a sexual risk detection system for Instagram messages that won ***Impact Recognition Award at ACM CSCW'23**.
- Implemented a machine-learning-based multi-modal ensemble classifier that detects risky private conversations with an accuracy of 85%.

Exploring Large Language Model(LLMs) Contribution to Online Risks
Inprogress in ICWSM'24
- Conducted a thorough analysis of LLMs including threat modeling to identify weaknesses that could be exploited to create and spread harmful online content.

Proactive Approach to Detecting Evolving Hate Speech Online
Inprogress in IEEE S&P'24

- Developed a hybrid proactive approach using NLP Word Embedding Technique and BERT-based techniques to detect evolving toxic language online achieving an accuracy of 92%.

Reverse Engineering TikTok's Moderation Algorithm
Inprogress in WebConf'24

- Executed a mixed-methodological examination of TikTok's content moderation algorithm.
- Engineered a machine-learning algorithm using Random Forest and SVM models to detect toxic video content autonomously.

TROLLMAGNIFIER: Detecting State-Sponsored Troll Accounts on Reddit
Published in IEEE S&P'22

- Developed a machine learning-based pipeline to detect networks of troll accounts on Reddit with an accuracy of 97% and reported 1,248 accounts to Reddit detected by the system

Understanding the Digital Lives of Youth
**** Honorable Mention Award at ACM CHI'22***

- A data-driven analysis of 100 participants' photo and video sharing habits on Instagram to gain insights into risky private conversations.

Understanding the Effect of Deplatforming on Social Networks
Published in WebSci'21

- Created a machine learning-based system to identify the same users on different online platforms for example Gab and Twitter.
- Analyzed the movement of banned users from Twitter to Gab.

Bringing the Kid back into YouTube Kids: Detecting Inappropriate Content on Video Streaming Platforms
Published in IEEE ASONAM'19

- Developed a deep learning pipeline to accurately detect child-unsafe content on YouTube by analyzing multiple video features

Technical Skills

- **Languages:** Python, C/C++, SQL/MYSQL, HTML/CSS, R
  Libraries: Pandas, NumPy, Matplotlib, Scikit-Learn, Selenium, BeautifulSoup, Plotly

Honors and Awards

- Impact Recognition Award, CSCW'2023
- SIGCHI Gary Marsden Travel Award, 2023
- Meta Research Ph.D. Fellowship Finalist, 2023
- Honorable Mention Award, CHI'2022
- IEEE S&P Student Grant, 2022 *($1500)*

Links

- **Google Scholar:** https://scholar.google.com/citations?user=wVYZPn4AAAAJ
  Github: https://github.com/theshizaali
  LinkedIn: https://www.linkedin.com/in/theshizaali/