Rukhshan Haroon

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EDUCATION

Tufts University, Medford, MA, USA.
Ph.D. in Computer Science, Sept. 2022 - June 2027 (expected)
Advisor: Fahad R. Dogar

Lahore University of Management Sciences (LUMS), Lahore, Pakistan.
B.Sc. in Computer Science, Sept. 2018 - May 2022
Advisors: Zartash Uzmi and Fareed Zaffar

WORK EXPERIENCE

Research Assistant, Networking Lab, Tufts University — June 2023 to present

1. **Enhancing Text Messaging for Autistic Adults with Generative AI** *(ongoing work)*
   - Designed and implemented the front-end and back-end for a text-messaging system which leverages large language models to help autistic users in interpreting and conveying tone and intent.
   - Conducted an experimental study with autistic users to iteratively enhance the system through participant feedback, with a focus on user preferences around self-autonomy and accessibility.

Research Assistant, Internet Security and Privacy Lab, LUMS — May 2020 to Sept. 2022

1. **Evaluating Program Debloating Paradigms and Their Compositions**
   - Implemented a scalable and automated benchmarking system for existing software debloating tools, which requires minimal end-user intervention to add support for new tools.
   - Conducted performance analysis of 4 debloating tools on this system using metrics such as the memory footprint, vulnerability, correctness and size of the debloated programs.
2. **Addressing COVID-19's Gendered Impact on Healthcare Workers (HCWs)**
   - Designed a triangulation-based approach for mixed-methods data collection in 5 hospitals, curating a dataset of 600+ survey responses and 50+ interview transcripts.
   - Employed thematic analysis and inferential statistics to explore gender based disparities in HCWs' experiences of the pandemic, and proposed technology driven interventions to mitigate them.
3. **Exploring the Impact of Social Media Usage on COVID-19 Perceptions**
   - Designed a mixed-methods methodology for data collection in malls and bazaars, curating a dataset of 380 survey responses and 30 interview transcripts.
   - Utilized thematic analysis and inferential statistics to explore how sociocultural factors impact receptivity to disinformation, and why certain misinformation types prevail more than others.

PUBLICATIONS

SoK: A Tale of Reduction, Security, and Correctness - Evaluating Program Debloating Paradigms and Their Compositions. ESORICS, 2023. PDF

On the Frontline During the Covid-19 Pandemic: Gender Inequality and Experiences of Healthcare Workers in Pakistan. ACM JCSS, 2023. PDF

Unpacking Misinformation Amid the COVID-19 Pandemic: A Mixed Methods Study. IEEE Internet Computing, 2022. PDF

SKILLS

Languages and Frameworks: ARKit, Unity, Pytorch, JavaScript, JSX, ReactJS, NodeJS, Python, scikit–learn, NumPy, Pandas, Keras, MongoDB, Firebase, MySQL, C#, C++, C, Haskell, HTML, CSS, Git, VSCode, OpenAI APIs, Docker.

Selected Coursework: Deep Learning, HCI for Disabilities, Advanced Programming, Data Structures, Algorithms, OOP, Software Engineering, Computer Networks, Network Security, Operating Systems, Databases, Artificial Intelligence, Data Science, Probability, Statistics.

HONORS AND AWARDS

XR Hackathon Winner: 1st position at Harvard XR DreamHack 2023.
Dean's Honour List: Awarded annually for academic excellence by LUMS from 2019-22.