

MUHAMMAD RAEES

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SUMMARY

PhD-trained UX researcher specializing in qualitative and quantitative methods with 0-to-1 AI prototyping. Focused on human-AI interaction, I study users' needs, mental models, and workflows through interviews, behavioral analysis, and controlled experiments. I design systems to establish appropriate reliance on generative AI and improve the usability of agentic systems. My work has been published (distinguished) in top HCI venues.

EDUCATION

- **PhD in Computing & Information Sciences** Aug 2022 - Present (Expected Soon)
Rochester Institute of Technology (RIT), Rochester, NY CGPA: 4.00/4.00
 - **Thesis:** Understanding and Designing Human-Centered AI Interactions for Non-Expert Users
 - AWARE-AI NSF Research Trainee (NRT)
- **Master of Science in Software Engineering** 2015 - 2017
Bahria University Islamabad (BUIC), Pakistan CGPA: 4.00/4.00 - Summa Cum Laude
 - Courses: Usability Engineering, Research Methods, Data Mining/Warehousing
- **Bachelor of Science in Software Engineering** 2009 - 2014
Mirpur University of Science and Technology (MUST), Pakistan CGPA: 3.87/4.00 - Distinction

PROJECTS/PORTFOLIO

- **Interactive ML for Business Professionals** 2023 - 2025
Tools: Python, scikit-learn, Dash, Google Cloud Platform
 - Built tools for business users (B2B) to **apply analytics** on their own datasets, supporting 0-to-1 product roadmap and decision-making workflows through **iterative design and research**.
 - Uncovered opportunities for customer analytics, increasing objective decision-making.
 - Led mixed methods evaluations (30+), addressing human factors issues with analytics tools—**trust, understanding, and perceived control**. (Published: CHI '23, '25, '26).
- **AI-Assisted Decision Support** 2024 - 2026
Tools: Python, scikit-learn, Dash, Google Cloud Platform
 - Conducted mixed-methods studies, combining **behavioral** and **subjective** measures to understand users' appropriate reliance on AI advice, building their analytical engagement.
 - Devised **design guidelines** to reduce the risk of over-reliance on AI, uncovering users' cognitive issues of direct dependence. (Published: UMAP '25).
- **AI-Assisted Writing for Non-Experts' Work Support** 2024 - 2026
Tools: Python, Large Language Models (ChatGPT)
 - Conducted rapid mixed-methods research with DSO professionals to evaluate their **reliance on AI-assisted outputs** in writing alt text for complex science figures.
 - Drove redesign of AI integration in accessibility workflows, establishing a **value-centric evaluation** of produced outputs. (Published: ASSETS '25). *Under Review: TACCESS '26*.
- **Conversational Visualization Authoring** 2025 - 2026
Tools: Python, Large Language Models (ChatGPT)
 - Developed interactive agents for **conversational interactions** with data and visualization, implementing automated **workflows for AI output evaluation**.
 - Designed exploratory interfaces for assessing outputs and supporting user interaction for trust.

EXPERIENCE

- **Graduate Research Assistant** Aug 2022 - Present
Rochester Institute of Technology Rochester, NY
 - **Designed and led** mixed-methods research studies in human-centered AI interaction with 100+ participants.
 - Collaborated with stakeholders across **academia and industry** to address business and research problems.
 - Published peer-reviewed research in reputed HCI venues, with multiple manuscripts under review.
 - **Co-instructed** undergraduate and graduate-level courses in game design and development (2026-2027).
- **Lecturer** 2019 - 2022
Mirpur University of Science and Technology Pakistan
 - **Developed and taught** classes to 500+ undergraduate and graduate-level students.
 - Designed and led efforts in research and development of organizational utility tools and socio-technical systems.
 - Devised and led initiatives for quality improvement and organizational educational objectives.
 - **Teaching Experience:** Human-Computer Interaction, Introduction to Machine Learning, Foundations of Software Engineering, Web Design and Development, Programming Fundamentals.

SKILLS

- **General:** Python (Data Analysis, Machine Learning), JavaScript, SQL, R, C/C++, App/Web/AI Prototyping
- **Research:** User-Centered Interaction Design, Quantitative and Qualitative Methods, Survey Design, Usability and A/B Testing, Interviews, Experimental Design, Thematic Analysis
- **Analytics:** Big Data Systems, Data Visualization, Dashboarding (Plotly, Tableau, Power BI, HighCharts)
- **Domains:** User Experience (UX) Research, AI-Assisted Decision Support, Visualization, Predictive Analytics, Design (Figma, Canva, Miro, Adobe XD), Studies (Qualtrics, Prolific, MTurk)
- **Misc.:** Project Management, Information Extraction and Automation, Teamwork and Leadership, Documentation

SELECTED PUBLICATIONS

C=CONFERENCE, J=JOURNAL

- [C.26] **Muhammad Raees** et al. (2026). Do People Appropriately Rely on AI Advice? An Analytical Review of HCI Research on Human-AI Decision-Making. In *ACM CHI Conference on Human Factors in Computing Systems*, Barcelona, Spain. [Honorable Mention Award]. DOI: [10.1145/3772318.3791467](https://doi.org/10.1145/3772318.3791467).
- [C.25a] **Muhammad Raees***, Yugo Iwamoto*, et al. (2025). Exploring Generative AI to Support Disability Service Professionals in Writing Image Descriptions for HCI Science Figures. In *27th International ACM SIGACCESS Conference on Computers and Accessibility*, Denver, CO. DOI: [10.1145/3663547.3759763](https://doi.org/10.1145/3663547.3759763)
- [C.25b] **Muhammad Raees** et al. (2025). Exploring Persuasive Engagement to Reduce Over-Reliance on AI-Assistance in a Customer Classification Case. In *33rd ACM Conference on User Modeling, Adaptation and Personalization*, New York City, NY. DOI: [10.1145/3699682.3728320](https://doi.org/10.1145/3699682.3728320)
- [C.25c] **Muhammad Raees** et al. (2025). UX Challenges in Implementing an Interactive B2B Customer Segmentation Tool. In *ACM CHI Conference on Human Factors in Computing Systems - Extended Abstracts*, Yokohama, Japan. DOI: [10.1145/3706599.3706687](https://doi.org/10.1145/3706599.3706687)
- [J.24] **Muhammad Raees** et al. (2024). From explainable to interactive AI: A literature review on current trends in human-AI interaction. *International Journal of Human-Computer Studies*, Vol. 189. [Top Cited for IJHCS]. DOI: [10.1016/j.ijhcs.2024.103301](https://doi.org/10.1016/j.ijhcs.2024.103301)

For a complete publication list, please view my [Google Scholar](#)

GRANTS, AWARDS, AND FELLOWSHIPS

- | | |
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| • Publication Support - (\$800). RIT Student Government. | 2026 |
| • Conference Travel Grant - (\$3500). RIT. | 2026 |
| • Conference Travel Grant - (\$2500). ACM Travel Support + RIT. | 2025 |
| • Conference Travel Grant - (\$1500). NSF-NRT-RIT | 2025 |
| • NSF AWARE-AI Trainee Fellowship - (\$1500+). NSF-NRT-RIT | 2024-2027 |
| • Graduate Research Scholarship - (\$150,000). Sappi Europe - Led by Konstantinos Papangelis. | 2022-2027 |
| • Scholarship Awards for PhD - (\$80,000+). HEC, Pakistan - Declined. | 2022 |
| • Master Scholarship Award - (\$1200). Bahria University, Pakistan | 2016-17 |

TALKS AND PRESENTATIONS

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| • Understanding User Reliance in Human-AI Interactions | University of Bayreuth, 2026 |
| • Presentation - Do People Appropriately Rely on AI Advice? | CHI, 2026 |
| • Understanding and Designing Human-Centered AI Interactions for Non-Expert Users | RIT, 2025 |
| • Presentation - Writing Image Descriptions for Accessibility Professionals | ASSETS, 2025 |
| • Presentation - Exploring Over-reliance in Business Decision-Making With AI | UMAP, 2025 |
| • Presentation - UX Challenges in B2B Interactive Customer Analytics | CHI, 2025 |
| • Understanding Domain Users' Challenges with AI Systems | RIT, 2023 |

SERVICE AND VOLUNTEERING

+AC=ALSO AREA CHAIR

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| • Statistics Without Borders - Project and Client Manager, New Client Acquisition Partner | 2024-Present |
| • Reviewer - ACM CHI (+AC) (2 x Outstanding Reviews Award), ACM IUI, IEEE VIS, IJHCS | 2024-Present |
| • Technical Mentor - RIT ASA DataFest, CodeToPhD | 2024-Present |
| • Data Science Volunteer - Hildreth Institute | 2024-2025 |
| • Data Science Volunteer - Data Kind | 2023-2025 |

TRAINING AND TEACHING

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|---|-----------|
| • Certification: UX Design, Data Science/ Analytics, AI Developer (Nano-Degree), Responsible Research. | 2022-2026 |
| • Teaching: Machine Learning, Human-Computer Interaction, Web Development, Programming. | 2019-2022 |
| • Writing: Technical Writing at Medium, Course Book - "Web Design" for an open university. | 2021-2026 |