Website | Prototypes
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IBRAHIM TAHMID

HUMAN-CENTERED AI | EYE TRACKING | MIXED REALITY

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OBJECTIVE AND INTEREST

Research-focused Ph.D. candidate specializing in eye-tracking and AI for context-aware adaptive XR experiences. Seeking to apply research skills in developing innovative solutions for intelligent user interfaces and semantic XR interactions with a proven track record in designing, developing, and evaluating user studies with publications in peer-reviewed conferences and journals, including TVCG, IUI, VR, ISMAR, and USENIX.

EDUCATION

Ph.D., Computer Science	**Virginia Tech**	**Aug 2020 – 2025 (exp)**

- **Thesis: Rich Semantic Interaction with Eye Gaze for AI-Mediated Sensemaking in Mixed Reality**
- Advisor: Dr. Doug Bowman, Dr. Chris North

B.Sc., Computer Science	**Bangladesh Univ of Engr and Tech (BUET)**	**Feb 2013 – Sep 2017**

EMPLOYMENT

Graduate Scholar Intern	**Lawrence Livermore National Lab, CA, USA**	**June 2022 - Aug 2022**

Visualizing defects in additive manufacturing models with occlusion management for both synchronous and asynchronous collaboration. Developed for HTC Vive in Unreal.

Full-Stack Software Developer	**Reve Systems, Dhaka, Bangladesh**	**Nov 2017- July 2019**

SELECTED RESEARCH PROJECTS

- Enhancing Immersive Sensemaking with Gaze-Driven Smart Recommendations | *Quest Pro* | IUI 25 Forthcoming
- Developed and evaluated an intelligent recommendation engine with XAI concepts that adapts itself in real-time based on the user's gaze pattern during sensemaking with significantly increased efficiency.
- Offered design guidelines for human-AI collaboration researchers emphasizing explainability and context-awareness in intelligent agents.

- A Generative AI to Defend Against Trojan Attacks on DNN Text Classification | Tensorflow | USENIX Sec '21
- Implemented a seq-2-seq generative model to develop a defense framework for Trojan attacks on Deep Neural Network classifiers. T-Miner, evaluated on 1100 models spanning 3 ubiquitous DNN architectures and 5 different classification tasks, is robust against targeted, advanced attacks from adaptive attackers.

- Collaborative Literature Review Across Reality Virtuality Continuum (2023) | *Quest 2, Quest Pro* | ISMAR 23
- Designed a collaborative system for researchers to join a networked workspace from AR, VR, and PCs
- Accommodation to support both collocated and remote users in the same workspace

- Evaluating Information Relevance Prediction based on Eye Tracking Data (2023) | *HoloLens 2* | ISMAR 23
- Designed a gaze-based feature metric to predict the user-perceived relevance of text during sensemaking
- Showcased the gaze's potential to reflect the user's mental cognition through AI-mediated sensemaking

- Semi-Automated Cluster Assistant Tool for Analysis in 3D environment (2022) | *Varjo Xr-3* | ISMAR 22
- Design a cluster assistant tool that can dynamically create clusters based on semantic user interactions
- Introduce a 2.5D visualization technique for 3D clusters that enhances user efficiency in analysis tasks
- Showcased that users prefer control over automated convenience in AI-mediated sensemaking

Other selected projects: ISMAR 23 (small vs large workspaces), TVCG 22 (outdoor AR collaboration)

TECHNICAL SKILLS

- **Language and Tools:** C#, Python, Java, C++, Tensorflow, Unity Game Engine, Unreal, Tableau, Figma, Moqups
- **Artificial Intelligence:** Explainable AI, Natural Language Processing, Computer Vision
- **Human-Centered Design:** Survey Design, User Study, UX Design, Statistical Analysis

SERVICE AND LEADERSHIP

- **Reviewer**, CHI, IUI, VR, ISMAR, VIS
- **Program Committee Member,** AIVR 2025, IEEE VR 2025
- **Leadership Roles,** Cranwell International Center (2023-24), Association for Bangladeshi Students (2022-23), BUET Photographic Society (2017)

AWARDS

- **Pratt Fellowship 2024-25, Aspire! Award Winner 2024-25, Tapia Fellow 2024**
- **Recipient of grant supported by NSF Center for Space, High-performance, and Resilient Computing (SHREC)**
- **IEEE VR 3DUI Contest Winner 2021, 2022**