

# Ibrahim Tahmid, Ph.D.

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Human-Centered AI | Eye Tracking | XR

XR Prototype Portfolio  
Personal Website  
LinkedIn

XR Developer with expertise in designing, prototyping, and deploying immersive applications across leading XR platforms. Skilled in novel 3D interaction design, real-time performance optimization, and integrating AI-driven features to enhance user experience. Experienced in cross-disciplinary collaboration and leading the full development cycle of XR solutions from concept to release.

## PROFESSIONAL EXPERIENCE

**Graduate Research Assistant | Lead Researcher** August 2019 — Present  
3D Interaction Group, Virginia Tech Unity, Python, C#, Eye-Tracking, LLM, Human-Centered AI

- Rapidly built and iterated **high-fidelity XR prototypes** in Unity across leading platforms (Quest Pro, Magic Leap 2, Varjo XR-3, HoloLens 2), demonstrating platform-agnostic development agility.
- Designed and deployed **gaze-aware recommendation systems** in Unity using eye tracking and LLMs, validated through rigorous studies showing up to 28% improvement in user efficiency.
- Created real-time **visual cue systems** for human-AI collaboration in XR, significantly reducing cognitive load.
- Engineered an **immersive hybrid collaboration platform** with PUN2, enabling synchronous and asynchronous meetings across space and time. More than 90% of users preferred our platform over Zoom and Teams.
- Developed predictive models for multimodal inputs in MagicLeap2 with up to 94% accuracy, **optimizing 3D UI performance**.
- **Led end-to-end initiatives** from concept and prototyping through validation and stakeholder presentation, translating findings into actionable XR solutions. **Designed and conducted user studies** with 200+ users to evaluate features, delivering comprehensive analyses of strengths and trade-offs to cross-disciplinary teams worldwide. **Conducted a systematic review** of 150+ academic articles to identify opportunities for advancing human-centered intelligent XR design.

**Engineering Intern** May 2025 — August 2025  
XR Systems, Qualcomm Eye-Tracking, OpenXR, AndroidXR, Optimization, Graphics Rendering

- Analyzed latency distribution in AndroidXR eye-tracking pipeline and built novel visualization tools, streamlining foveated rendering workflows and **reducing engineering workload by up to 75%**.
- Designed and executed a study on ET camera accuracy, latency, and frequency, quantifying their **impact on foveated image quality and informing optimization strategies**.

**Scholar Intern** June 2022 — August 2022  
Lawrence Livermore National Lab Unreal Engine, Prototyping, 3D Visualization

- **Prototyped XR workflows in Unreal Engine** for collaborative defect detection in additive-manufacturing models.
- Implemented three visualization and interaction paradigms (selective occlusion culling, layered transparency, spatial annotations), enabling synchronous and asynchronous inspection of 3D-printed models; evaluated with engineers and presented results to executives, helping **secure a multi-year research grant** with Virginia Tech.

**Full Stack Software Developer** November 2017 — July 2019  
Reve Systems Java, Python, Spring, Web Development, Android Development, MySQL

- Led modernization of a legacy Android app (1M+ downloads, 20K+ concurrent users), combining heuristic audits with telemetry data that increased daily retention by 18%. Architected and optimized a MySQL data pipeline ingesting 50M+ weekly interaction events, delivering real-time dashboards that powered A/B testing, cohort analyses, and UX roadmap decisions.

## EDUCATION

**Ph.D., Computer Science**, Virginia Tech, Adv: Doug Bowman & Chris North August 2019 — September 2025  
*Thesis: Toward AI-Mediated Immersive Sensemaking with Gaze-Aware Semantic Interaction*  
**B.Sc., Computer Science**, Bangladesh University of Engineering and Technology (BUET) February 2013 — September 2017

## SKILLS

XR & Programming	Unity, C#, Unreal Engine, C++, PUN2, OpenXR, AndroidXR, Eye-Tracking, Foveated Rendering
AI & Data Analysis	Python, GenAI, Sentis, Statistical Modeling, Mixed-Methods Studies, Qualitative Analysis
Collaboration & Tools	Git, Confluence, Notion, Figma, Miro, PowerPoint, Filmora

## AWARDS AND HONORS

**Big Idea Winner**, for proposing a detailed research pathway to ubiquitous context-aware XR VT CHCI Workshop, 2025  
**Aspire Winner**, for pursuit of building common ground through creative, thoughtful, and impactful projects Virginia Tech, 2024  
**Winner of 3D User Interface Design Contest**, for educational XR experience with novel interaction techniques IEEEVR 2021, 2022