Alexander Giovannelli

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SUMMARY

My research interest lies in the intersections of Human-Computer Interaction (HCI), Augmented/Virtual Reality (AR/VR), and 3D User Interfaces (3DUI). My current work involves prototyping and evaluating communication methods for collaborative work in AR/VR. Specifically, I am exploring how we could improve non-verbal communicative cues when using avatars and visual information in immersive collaboration applications.

EDUCATION

Virginia Tech   Blacksburg, VA, USA
Ph.D. in Computer Science advised by Doug A. Bowman, GPA: 4.00/4.00   Aug. 2021–Present

University of Cincinnati   Cincinnati, OH, USA
B.S. in Computer Engineering with German Studies minor, GPA: 3.30/4.00   Aug. 2013–May 2018

SKILLS

Programming Languages: C#, JavaScript, Java, Python, HTML, CSS
Productivity Tools: Unity, Git, JMP, SPSS, LaTeX, Tableau

EXPERIENCE

Lawrence Livermore National Laboratory   Livermore, CA, USA
Computing Research Intern   Summer 2023

- Perform contextual inquiry and analysis to derive research intent and contribution for project team
- Create prototype applications for virtual reality experiences using C# and Unity technologies
- Facilitate meetings between multi-disciplinary project stakeholders

Virginia Tech   Blacksburg, VA, USA
Graduate Research Assistant   Summer 2022 & Spring 2023

- Conduct research regarding collaboration using avatars in augmented and virtual reality
- Generate prototype applications and experimental studies using C# and Unity technologies
- Design and administer user studies in accordance with Institutional Review Board regulations

JPMorgan Chase & Co.   Columbus, OH, USA
Associate Software Engineer I   Jul. 2018–Jul. 2021

- Developed front-end features for Chase.com using JavaScript, HTML, and CSS technologies
- Designed and implemented minimum viable product user interfaces via Figma design tool
- Authored technical documentation for product owners and developers
- Appointed subject matter expert in behavioral-driven development and CI/CD initiatives

Siemens Healthineers   Forchheim, BY, DE
Software Engineer Intern   Jan. 2017–Aug. 2017

- Developed back-end software for use in advanced therapy devices using the C# programming language
- Created system architecture diagrams to record project design changes and behaviors with Sparx Enterprise Architect
- Represented project team in international software integration meetings using German and English languages

Projects

- Avatars for Multiscale Collaborative Virtual Environments   Mar. 2023–Present
  Design and prototyping of a virtual environment for collaboration in multiscale inspection processes
- Virtual Avatar Reaction Visualizations in VR   Jun. 2022–Mar. 2023
  Development of a virtual environment for user studies investigating avatar reaction visualizations in collaboration
- Environment for Intermittent Typing Experiments in VR   Jan. 2022–May 2022
  Creation of a virtual environment with mixed reality capabilities for conducting text-entry user studies

Publications

[1] **A. Giovannelli**, F. Rodrigues, S. Davari, I. A. Tahmid, L. Lane, C. Connor, K. Davidson, G. N. Ramirez, B. David-John, and D. A. Bowman, "Clue hog: An immersive competitive lock-unlock experience using hook on go-go technique for authentication in the metaverse", in *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2023, pp. 945–946.

[2] J. Thomas, S. W. Lee, **A. Giovannelli**, L. Lane, and D. Bowman, "A communication-focused framework for understanding immersive collaboration experiences", in *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2023, pp. 301–304.

[3] **A. Giovannelli**, L. Lisle, and D. A. Bowman, "Exploring the impact of visual information on intermittent typing in virtual reality", in *2022 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, 2022, pp. 8–17.

[4] L. Lisle, F. Lu, S. Davari, I. A. Tahmid, **A. Giovannelli**, C. Llo, L. Pavanatto, L. Zhang, L. Schlueter, and D. A. Bowman, "Clean the ocean: An immersive vr experience proposing new modifications to go-go and wim techniques", in *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2022, pp. 920–921.

[5] E. Mohammadrezaei, **A. Giovannelli**, L. Lane, and D. Gračanin, "A digital twin based approach to smart lighting design", in *2022 Winter Simulation Conference (WSC)*, 2022.

Awards & Scholarships

- Honorable Mention for Best IEEE ISMAR 2022 Conference Paper [3]   2022
- Best 3DUI Contest Entry [4]   2022

Teaching

- **Graduate Teaching Assistant** at Virginia Tech   Fall 2022
  Comparative Languages (CS-3304)
- **Graduate Teaching Assistant** at Virginia Tech   Fall 2021 & Spring 2022
  Software Design & Data Structures (CS-2114)

Organizations

- Member of Computer Science Graduate Student Council   2021–Present
  Represented the interests of the CS graduate student body, helped organize social events among graduate students, and helped incoming students become familiar with departmental procedures and activities
- Member of the Center for Human-Computer Interaction   2021–Present
  Active participant in the Center seminars regarding the design of novel interactive experiences and the study of human interaction with and through technology