

MATT GOTTSACKER

Curriculum Vitae—September 30, 2022

PERSONAL INFORMATION

Name & Titles: Mr. Matt Gottsacker
Born: August 31, 1996
in West Bend, Wisconsin, USA
Nationality: USA
Languages: English (Fluent), Spanish (Intermediate proficiency)

CONTACT INFORMATION

Address: 3100 Technology Pkwy
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Personal website: <https://mattgottsacker.space/>
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Google Scholar: <https://scholar.google.com/citations?user=1HM2NP4AAAAJ>
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ACADEMIC STUDIES AND DEGREES

08/2020–present **Doctoral** degree (expected 05/2025, advisor Prof. Gregory Welch) in Computer Science at the University of Central Florida
08/2015–05/2019 **Bachelor of Science** degree in Computer Science, with a minor in English (concentration on Rhetoric, Writing, and Technology) at Saint Louis University
01/2017–05/2017 **Semester abroad** at Webster University in Vienna, Austria

RESEARCH INTERESTS

Virtual/Mixed/Augmented Reality, Human-Computer Interaction, Interruptions, Cross-Reality Interactions and Transitions

PROFESSIONAL POSITIONS AND AFFILIATIONS

- 08/2020–present ***Graduate Research Assistant***
Synthetic Reality Lab (SREAL), Institute for Simulation and Training,
University of Central Florida, Orlando, FL, United States
- Research communication challenges related to Augmented, Mixed, and Virtual Reality technologies such as interpersonal interruptions. Conduct human-subjects experiments capturing quantitative and qualitative data. Analyze results and disseminate findings through peer-reviewed academic publications, conference presentations, and public social media posts.
- 05/2022–08/2022 ***Visiting Researcher***
Computer Graphics and User Interfaces Lab, *Columbia University*,
New York, NY, United States
- Research techniques for transitioning among multiple perspectives in a collaborative Mixed Reality virtual environment, and explore interfaces to resolve mismatches between AR users' physical and virtual positions after transitioning into another virtual perspective. Advised by Prof. Steven Feiner.
- 08/2019–06/2020 ***Alumni Service Corps Teacher***
Department of Mathematics, *Marquette University High School*, Milwaukee, WI, United States
- Taught Computer Programming course using the Java programming language; designed curriculum to be interdisciplinary, creative, innovative, collaborative, and ethical. Mentored students on the FIRST Robotics Competition programming subteam. Served as a Kairos retreat leader. Co-directed the 2019 production of *Senior Follies*, a play written by students.
- 06/2019–08/2019 ***Data Science Research Intern***
Nintex, Bellevue, WA, United States
- Developed a fully automated data analysis pipeline to gain insights about user behavior. The pipeline detects fresh data and transforms meaningful information into reports for company executives that summarizes customer usage and highlights interesting or outlier activity.
- 05/2018–07/2018 ***Research Intern***
MIT Lincoln Laboratory, Lexington, MA, United States
- Worked on a Software-Defined Networking application that allows network analysts to write access control policies based on high-level identifiers like usernames that are enforced at the network

level. Created a web-based application for the system to visualize the bindings between pairs of network identifiers.

- 08/2018–05/2019 **Web Developer and Technology Consultant**
Computer Assisted Instruction Lab (Compass Lab), *Saint Louis University*, St. Louis, MO, United States
- Designed and implemented a website (slucompasslab.com) to better connect students and instructors in the SLU English Department with the Lab’s technology resources. Built a web-based virtual reality tour to acquaint users with the technology.
- 05/2017–08/2017 **Application Development Intern**
State Farm, Bloomington, IL, United States
- Created an Enterprise Service Bus to connect a UI to a RESTful API.
- 05/2016–08/2016 **Technical Writer and Pre-Sales Support**
airSpring Software, Lexington, KY, United States
- Edited and generated high-level product documentation around instruction and usage examples of the company software. Created product demos for software sales.

AWARDS AND HONORS

- 2022 **Meta PhD Research Fellowship Finalist.** One of two finalists in the AR/VR Future Technologies program track. There were over 2,300 applicants across 21 tracks.
- 2022 **Doctoral Consortium** at *IEEE Virtual Reality and 3D User Interfaces (VR)*. Selected to present and discuss dissertation plans with AR/VR researchers from academia and industry.
- 2019 **James D. Collins Award for Academic Excellence** at *Saint Louis University*. Recognized by the Computer Science department for outstanding scholastic and creative achievement, awarded to one senior each year.
- 2018 **Intern Idea Innovation Challenge Winner** at *MIT Lincoln Laboratory*. With four other interns, designed a system that uses natural language processing techniques to analyze workplace speech patterns to detect and inform employees of implicit biases. Presented to five executives of MIT LL.
- 2018 **Deloitte Consulting Challenge Winner** at *Saint Louis University*. Designed and presented a mixed-use urban redevelopment plan for Midtown in St. Louis.
- 2018 **PricewaterhouseCoopers Consulting Challenge Winner** at *Saint Louis University*. Designed and presented a case study solution

- around automation in convenience stores.
- 2018 ***Knoedler Student Research Grant***, travel scholarship to attend the *ACM Internet Measurement Conference* at Northeastern University in Boston, MA, United States.
- 2017 ***GENI Regional Workshop Travel Grant***, travel scholarship to attend workshop about using the Global Environment for Network Innovations at the University of Oregon in Eugene, OR, United States.
- 2015 ***Presidential Scholarship Finalist*** at *Saint Louis University*, scholarship for exemplary student leaders, totaling \$80,000 over four years

PROFESSIONAL SERVICE

- **XR Student Researchers Community**

- Created a Discord server to connect students researching XR technologies all around the world. Over 250 students discuss research, organize meet-ups, recruit participants for online studies, and socialize.

- **Journal Reviewer**

- Frontiers in Virtual Reality 2022
- IEEE ISMAR 2022 (received Special Recognition for Outstanding Review)

- **Conference Reviewer**

- ACM SIGCHI 2021
- IEEE VR 2022

- **Professional Associations**

- Member, Association for Computing Machinery (ACM)
- Member, Institute of Electrical and Electronics Engineers (IEEE)

- **Event Organization and Chair Positions**

- *Student Volunteer and Mentor*, IEEE Virtual Reality and 3D User Interfaces (VR), 2022
- *Student Volunteer and Mentor*, IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 2021
- *Student Mentor*, IEEE Virtual Reality and 3D User Interfaces (VR), 2021

- *Social Media Chair*, International Conference on Artificial Reality and Telexistence (ICAT) & Eurographics Symposium on Virtual Environments (EGVE), 2020

PENDING PATENTS

- Gregory Welch, **Matt Gottsacker**, Nahal Norouzi, Gerd Bruder. United States Patent: “*Intelligent Digital Interruption Management.*”

CONFERENCE PROCEEDINGS (PEER-REVIEWED)

- [1] **Matt Gottsacker**, Nahal Norouzi, Ryan Schubert, Frank Guido-Sanz, Gerd Bruder, and Gregory F. Welch. Effects of Environmental Noise Levels on Patient Handoff Communication in a Mixed Reality Simulation. In *Proceedings of the ACM Conference on Virtual Reality and Software Technology (VRST)*, pages 1–10, 2022 [Forthcoming].
- [2] Nahal Norouzi, **Matt Gottsacker**, Gerd Bruder, Pamela J. Wisniewski, Jeremy Bailenson, and Gregory F. Welch. Virtual Humans with Pets and Robots: Exploring the Influence of Social Priming on One’s Perception of a Virtual Human. In *Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*, pages 311–320, 2022.
- [3] **Matt Gottsacker**, Nahal Norouzi, Kangsoo Kim, Gerd Bruder, and Gregory F. Welch. Diegetic Representations for Seamless Cross-Reality Interruptions. In *Proceedings of the IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, pages 310–319, 2021.
- [4] Connor Daniel Flick, Courtney J. Harris, Nikolas T. Yonkers, Nahal Norouzi, Austin Erickson, Zubin Choudhary, **Matt Gottsacker**, Gerd Bruder, and Gregory F. Welch. Trade-Offs in Augmented Reality User Interfaces for Controlling a Smart Environment. In *Proceedings of the ACM Symposium on Spatial User Interaction (SUI)*, pages 1–11, 2021.
- [5] Zubin Choudhary, **Matt Gottsacker**, Kangsoo Kim, Ryan Schubert, Jeanine Stefanucci, Gerd Bruder, and Gregory F. Welch. Revisiting Distance Perception with Scaled Embodied Cues in Social Virtual Reality. In *Proceedings of the IEEE International Conference on Virtual Reality and 3D User Interfaces (VR)*, pages 788–797, 2021.

WORKSHOP PAPERS

- [6] Robbe Cools⁺, **Matt Gottsacker**⁺, Adalberto Simeone, Gerd Bruder, Gregory F. Welch, and Steven Feiner. Towards a Desktop-AR Prototyping Framework: Prototyping Cross-Reality Between Desktops and Augmented Reality. In *Adjunct Proceedings of IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, pages 1–8, 2022 [Forthcoming].

⁺ : Denotes equal contributions.

POSTERS, DEMOS & ABSTRACTS

- [7] **Matt Gottsacker**, Raiffa Syamil, Pamela J. Wisniewski, Gerd Bruder, Carolina Cruz-Neira, and Gregory F. Welch. Exploring Cues and Signaling to Improve Cross-Reality Interruptions. In *Adjunct Proceedings of IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, pages 1–6, 2022 [Forthcoming].
- [8] **Matt Gottsacker**. [DC] Balancing Realities by Improving Cross-Reality Interactions. In *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, pages 944–945, 2022.
- [9] **Matt Gottsacker**, Steven R. Gomez, Richard Skowrya, and Flavio Esposito. Toward Effective Visualization of Network Identifier Bindings in a Software-Defined Network. In *ACM Internet Measurement Conference (IMC)*, 2018.

LIST OF CO-AUTHORS AND COLLABORATORS

- Dr. Steven Feiner (Columbia University, Dept. of Computer Science)
- Robbe Cools (KU Lueven, Dept. of Computer Science)
- Dr. Adalberto Simeone (KU Lueven, Dept. of Computer Science)
- Dr. Nahal Norouzi (Meta Reality Labs)
- Dr. Alyssa Tanaka (Soar Technology, Inc.)
- Dr. Pamela J. Wisniewski (Vanderbilt University, Dept. of Computer Science)
- Dr. Carolina Cruz-Neira (University of Central Florida, Dept. of Computer Science)
- Dr. Jeremy Bailenson (Stanford University, Dept. of Communication)
- Dr. Kangsoo Kim (University of Calgary, Dept. of Electrical and Software Engineering)

- Dr. Jeanine Stefanucci (University of Utah, Dept. of Psychology)
- Dr. Steven R. Gomez (MIT Lincoln Laboratory)
- Dr. Richard Skowyra (MIT Lincoln Laboratory)
- Dr. Flavio Esposito (Saint Louis University)
- Dr. Frank Guido-Sanz (University of Central Florida, College of Nursing)
- Raiffa Syamil (University of Central Florida, Dept. of Computer Science)
- Austin Erickson (University of Central Florida, Dept. of Computer Science)
- Zubin Choudhary (University of Central Florida, Dept. of Computer Science)
- Ryan Schubert (University of Central Florida, Institute for Simulation and Training)
- Dr. Gerd Bruder (University of Central Florida, Institute for Simulation and Training)
- Dr. Gregory F. Welch (University of Central Florida, College of Nursing)

TEACHING

- Computer Programming, Marquette University High School, 2019-2020
 - Introductory Computer Science class taught to grades 10-12 using the Java programming language. Designed the course curriculum to be interdisciplinary and creative through projects that allowed students to incorporate their interests from other classes. Brought in guest speakers professionally designing and building software at companies such as Epic and Rivian. <Link to archived course website>.
- CAP 5115 Virtual Reality Engineering Guest Lectures, taught by Dr. Ryan McMahan, University of Central Florida, 2021.
 - “System Fidelity”
 - “Haptics”
- UCF NASA SUITS Workshop, Marquette University High School, 2021
 - As the Outreach Lead on the UCF NASA SUITS team, led an educational event at MUHS Hilltopper Robotics to demonstrate and discuss how XR technology is used for space exploration.
- Students Mentored
 - Abraham Hernandez, undergraduate student (Computer Science)