

Education

Virginia Polytechnic Institute and State University, Blacksburg, VA

- **B.S., Industrial & Systems Engineering (2016-2020)** **Overall GPA: 3.48**
- **M.S., Industrial & Systems Engineering (2021- Expected Fall 2023)** **Overall GPA: 4.0**

Publications

- Luksas, J., Quinn, K., Gabbard, J. L., Hasan, M., He, J., Surana, N., Tabbarah, M., & Teckchandani, N. K. (2022). Search and Rescue AR Visualization Environment (SAVE): Designing an AR Application for Use with Search and Rescue Personnel. *Proceedings - 2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, VRW 2022*, 488–492.
- Flittner*, J., Luksas, J., & Gabbard, Dr. J. L. (2021). Predicting User Performance in Augmented Reality User Interfaces with Image Analysis Algorithms. *Https://Doi.Org/10.1177/1071181320641511*, 64(1), 2108–2112.
- Flittner, J., Luksas, J., & Gabbard, J. L. (2020). The Viability of Image Analysis Measures of Visual Clutter in the AR UI Space as a Predictive Measures of User Performance. *Proceedings - 2020 IEEE Conference on Virtual Reality and 3D User Interfaces, VRW 2020*, 230–233.

Current Projects (ISE COGNitive Engineering for Novel Technologies Lab)

Virginia Department of Transportation (VDOT)

July 2022 – Current

Project is aimed to help present bridge infrastructure inspectors speed up and automate the inspection process using custom AR authoring technology.

- **Graduate Research Assistant**
 - Acquired understanding of workflow and technology restrictions present for VDOT personnel and bridge inspectors in order to design an Augmented Reality (AR) bridge inspection system that would meet their data recording extents, function in their workplace conditions, and ultimately gain inspector buy-in
 - Developed initial proof of concept AR HoloLens 2 application in Unity to introduce stakeholders to the functional possibilities of AR and provide a design milestone for which future work could be added
 - Collaborating with experimenters to develop an app to facilitate a user study exploring interaction techniques

National Institute of Standards and Technology (NIST)

August 2021 – Current

Project is aimed to develop a connected AR application to be used by first responders in wide-area (natural disaster) search and rescue operations in order to more effectively and safely facilitate the operation.

- **Graduate Research Assistant**
 - Supervised the elicitation of requirements from 7 different first responder SMEs, including Blacksburg Volunteer Rescue Squad personnel, through interviews and a site visit
 - Presented research and performed live demos at NIST's premier PSCR first responder conference
 - Implemented and tested world-scale outdoor tracking architecture for use with HoloLens 2 headsets
 - Developing and updating an AR HoloLens 2 application in Unity designed to aid search and rescue personnel in the notation and localization of hazards and victims in a wide area disaster or search scenario
 - Evaluating and redesigning AR application UI to respect technological limitations as well as maximize human-computer interaction
 - Communicating with experimenters to develop an app to facilitate a user study exploring the most optimal hazards cueing methods of surrounding hazards

Proficiencies

- **Unity** – 4 years developing VR and AR Unity apps utilizing custom C# scripts to meet exact customer specifications
- **Microsoft MRTK Plugin** – Utilized the MRTK Unity framework to build complex AR HoloLens 2 apps
- **Salesforce** – Over 1 year designing and managing team building an application on the Salesforce platform for USDA
- **R language** – Experience managing, parsing, and visualizing large datasets using the R language
- **Agile** – Worked over 1 year completing multiple sprints on the development team and as a product owner

Past Work Experience

Creative Systems and Consulting

June 2020 – July 2021

- **Business Analyst**
 - Elicited requirements efficiently from USDA agency employees in order to build a grant management system that fulfilled all their needs
 - Worked effectively within an Agile team producing customer value every sprint
 - Captured user requirements in comprehensive and easy to read user stories while supporting the development team throughout each sprint

Collins Aerospace

May 2019 – August 2019

- **Aftermarket Engineering Intern**
 - Worked in lighting and deicing departments supporting repair technicians and assessing site's FAA tool compliance
 - Built and streamlined integral test stands used to ensure reliable operation of repaired parts

ISE COGNitive Engineering for Novel Technologies Lab (COGENT)

- **Application Designer** **Spring 2020**
 - Developed a VR application aimed at first responders that utilized a 3D camera system to scan surrounding areas into 3d mesh in real time
 - Implemented a notation software that allowed icons and hand drawing to be virtually overlayed on 3d mesh
- **Research Assistant** **Fall 2019**
 - Provided technical advice to a graduate student during the planning stages of an AR experiment
 - Developed Unity scripts to facilitate the desired operation of the Hololens in an AR experiment environment
- **Application Designer** **Spring 2019**
 - Developed a HoloLens AR application to aid users in the construction of a model bridge using an augmented reality 3D model
 - Application was deployed at a Virginia Tech STEM summer camp for high schoolers

Harris Teeter

- **Information Systems Intern, Corporate** **May 2018 – August 2018**
 - Oversaw transition of company devices to a new MDM solution
 - Coordinated with teams to solve large scale technology problems and outages in a timely manner
 - Streamlined company device recording system