

Jacob Keller

www.linkedin.com/in/jacob-r-keller/

Email : keller.974@osu.edu

Mobile : (859) 802-7976

EDUCATION

- **Ohio State University**

Columbus, OH

Bachelor of Science in Human Systems Integration

Aug. 2017 – Dec. 2020

My undergraduate degree in Human Systems Integration is entirely unique, and was co-sponsored by faculty in the Department of Integrated Systems Engineering and Department of Psychology to provide a highly interdisciplinary and challenging curriculum. Coursework has included cognitive systems engineering, cognitive psychology, design, visual analytics, and aviation human factors.

EXPERIENCE

- **Resilient Cognitive Solutions**

Pittsburgh, PA

Cognitive Systems Engineering Intern

Summer 2019 and 2020

- **Decision Support Software Systems:** Contributed to the design of decision support systems for intelligence analysts and cybersecurity experts. Leveraged Applied Cognitive Work Analysis and associated analytic frameworks to develop software tools which utilize aspects of visual attention and cognitive psychology to support practitioners in complex environments.
- **Cyber:** Participating in internal war gaming for the development of a cybersecurity decision support system. Researched and designed hypothetical cyber attacks, drawing inspiration from North Korean and Chinese cyber-criminal methodologies identified by Mandiant Fireeye.
- **Interface Design:** Created GUIs that provide cognitive affordances to practitioners in complex data overload environments. Became proficient in Adobe Illustrator, Indesign, and other software tools supporting this work

- **Cognitive Systems Engineering Laboratory, Ohio State University**

Columbus, OH

Undergraduate Research Assistant

August 2018 - Present

- **Human-Robot Space Operations:** Conducted literature search for an experimental virtual test bed to enable cost effective simulations of human-robot space operations that entail high ecological validity. Will be involved in further development of Human-Robot test bed which emphasizes the complexity of space operations.
- **Intelligence Analysis Experiment:** Contributed to the design of an experiment focusing on human-machine teaming for intelligence analyst teams, testing varying levels of human-machine system architectures and communication rates.
- **Software Resilience Engineering:** Conducted extensive literature search surrounding the coordinative and collaborative behavior of remotely distributed DevOps software engineers as a component of the SNAFUCatchers consortium as Ohio State.
- **Healthcare:** Performed a literature search supporting ongoing laboratory work in the area of patterns of patient decompensation. Ongoing efforts within the Ohio State Wexner Medical Center aim to use Machine Learning to recognize patterns in patient health decline and leverage this knowledge in integrative decision support systems for nurses.

PROJECTS

- **Autonomous Flight Safety Systems (January 2020 - May 2020):**

Our student team was funded by the Federal Aviation Administration to investigate issues within the evaluation of autonomous flight safety systems (AFSS) for commercial space launches. Extensive analysis including travel to Cape Canaveral and the FAA headquarters to conduct semi-structured interviews with over eighty stakeholders from industry and government. A policy solution was delivered to the FAA outlining a path forward to enable the growth of the commercial space sector without compromising the safety of the public.

PUBLICATIONS

- **Keller, J., IJtsma, M., & Newton, E. (In-Progress). A Critical Examination of Autonomous Flight Safety Systems from a Cognitive Systems Engineering Perspective: Challenges, Themes, and Outlying Risks.:**

In-Progress paper with Drs. Martijn IJtsma and Elizabeth Newton. Abstract was accepted to 2020 International Astronautical Conference but withdrawn due to COVID-19.