

# Aidan Buffum

aabuffum@gmail.com | (401) 871-8494

## WORK EXPERIENCE

### The MITRE Corporation

Software Engineer and Visualization Scientist

*Serious Games Lab*

**Bedford, MA**

*June 2020 – Present*

- Designed and implemented a content-focused development platform for conversational games including seven derivative games with dozens of episodes of educational and experimental content
- Work presented at the Serious Play Conference (2021, 2023, 2024), International Conference on Narrative (2022), and submitted for publication in the International Journal of Public Opinion Research
- Developed several additional serious games with unique systems for experimentation supporting public and commercial sector research and resource needs

*Immersion, Interaction, and Hybrid Computing Labs*

- Authored extensive technical documentation on development practices and instructions for new users and developers working with and expanding on previous works. Mentored early-career engineers on technical, best-practice, and team communication skills
- Developed a framework to expedite the creation of new simulation, training, and experimentation tools in the Unity and Unreal game engines. Automated full-stack optimization processes for code, assets, build pipelines, and software runtimes
- Developed an automated system for efficiently procedurally generating real-world environments at runtime, supporting ongoing research into the technical feasibility of high-fidelity global terrain generation and streaming in modern simulation and hardware environments.
- Designed and ran several experiments measuring the limitations of modern game streaming architecture. Performed and presented in-depth analysis on measures of performance, cost, reliability, and requirements to implement game streaming at scale for a variety of training and simulation use cases

*Digital Twin and Aviation Labs*

- Developed a stand-alone simulation augmentation tool to generate additional measurements for systems under test within other industry and government standard simulation tools. Provided an open API and inter-operable digital twin communication between simulators and physical test platforms
- Augmented machine learning systems for autonomous vehicle operation. Generated extensive synthetic data for view segmentation, identification, and decision support. Automated the annotation of high-fidelity real and synthetic training data
- Engineered tools to simulate swarms of small platforms and physical systems together in real time. Evaluated and aided new autonomous collision avoidance system training. Work submitted to the AIAA SciTech Forum (2026)
- Lead development of a safety incident reporting and monitoring dashboard for use by thousands of users globally. Developed visualization dashboards and database management systems for supply chain logistics and sustainability
- Created and maintained a flexible dashboard to visualize real-time network stability information and analyze the resiliency of connections between telecommunication systems in airplanes and flight-supporting systems. Extended an automated system interoperability pipeline for communication platforms and standards

### Amazon

Software Development Engineer Intern

**Seattle, WA**

*June 2019 – August 2019*

- Built internal AWS tooling and visualization dashboards for seller metrics on the Amazon Marketplace App Store
- Consolidated and moderated several large datasets. Automated data pipelines for efficient access and processing

### Worcester Polytechnic Institute

Undergraduate Researcher and Student Teaching Assistant

**Worcester, MA**

*January 2018 – May 2020*

*Undergraduate Researcher, Code Crafters*

- Developed applications using genetic algorithms and user-defined rules for procedural generation of quilt patterns to introduce computer science concepts to crafting communities

*Student Teaching Assistant*

- Held office hour and help sessions for Computer Science and Interactive Media courses. Graded assignments and provided feedback

## EDUCATION

### Worcester Polytechnic Institute

Bachelor of Science in Computer Science and Interactive Media & Game Design

**Worcester, MA**

*May 2020*

## ADDITIONAL SKILLS

- Programming Languages: C#, Java, C++, C, Python, JavaScript, TypeScript, HTML, CSS, SQL, Scala, Lua
- 5+ Years of Professional Experience with: Git, Agile Development, Scrum, Jira, Kanban
- Extensive Experience with Game Engine & Simulation Tools: Unity, Unreal Engine, Godot, AFSIM, Webots
- Production Experience with Web Technologies: Node.js, Flask, Vue.js, Nginx, dotNET, AWS, Pandas, MongoDB
- Proficient in Microsoft Office / 365 Suite: Word, Excel, PowerPoint, SharePoint, Outlook, Teams, Publisher
- Proficient in Adobe and Autodesk Software Suites: Photoshop, Premiere, Illustrator, Maya, 3ds Max, AutoCAD