

Jack Burkhardt

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EDUCATION

Northwestern University

BA and MS in Computer Science

Undergrad GPA: 3.65/4.0; Master's GPA: 4.0/4.0

Relevant Coursework: Operating Systems; IP Networking; Wireless for IoT/Embedded; Linear Algebra; Cybersecurity;

Communicating CS; Scalable Software Architecture; 3D Animation; Ethics in Computing; WebGL Graphics; Rapid Prototyping

Evanston, IL

Expected June 2024

WORK EXPERIENCE

SIMCASE (f.k.a. Project KeyWave, since acquired)

Remote, USA

Software Engineer (Contract) | [Source Documentation](#)

Feb 2024 – Present

- Built a web game for managerial students integrating visual novel, job simulator, and roleplaying systems using an event-driven finite state machine and JSON serialization in Unity/C#
- Wrote tools to analyze dialogue trees for content distribution and debugging, giving designers a birds-eye-view of their work
- Implemented a JavaScript socket.io library to synchronize game state and player activity, with fallbacks to avoid data loss
- Empowered designers with tools to reduce tedium and human error -- lowered dialogue creation time from ~5 min to 30 sec

NASA

Wallops Island, VA

Flight Simulator QA Programming Intern | [Exit Presentation](#)

Jun 2023 – Aug 2023

- Validated a flight simulator and safety analysis tool through unit tests, numerical analysis, and runs against previous mission data
- Identified 11 sources of incorrectness & instability with little guidance, using industry standard tools like GDB and Valgrind
- Rapidly learned and built upon a 20 year old and 15k line C++ codebase by drawing program flow, debugging, and writing docs
- Listened to needs of stakeholder offices, implemented new features, then provided end user instructions and documentation

OVERTURE GAMES

Chicago, IL

Lead Systems Engineer | [Steam Page](#) | [Blog Post](#)

Jun 2022 – Oct 2023

- Shipped music practice game Intervallic built on Unity and C# which reduces burnout among young music students
- Built a metrics system which sends data to a REST API and NoSQL database on AWS, providing insight on player engagement that impacts business direction
- Created robust level editor tools utilizing polymorphism and factory methods to support team and enable user generated content
- Spearheaded initiatives for new systems, including improved cameras, microphone pitch detection, and a QA process
- Drafted technical design docs with diagrams, testing plans, scope contingency plans, then sought feedback from team

MAYFEST PRODUCTIONS

Evanston, IL

Producer | [Website](#)

Sep 2021 – Jun 2024

- Planned and executed Dillo Day music festival with 12,000+ attendees, 100+ crew members, and 14 artists
- Oversaw the work of vendors and other crew members to keep the festival on time and occasionally resolve minor crises
- Engaged in contract negotiations with talent agencies and vendors to ensure quality service and satisfy logistical constraints
- Documented each year's lessons and created actionable steps to improve the attendee experience and team safety

NORTHWESTERN UNIVERSITY

Evanston, IL

Unity/VR Programmer | [Blog Post](#) | [Demo Video](#)

Jun 2021 – Jun 2022

- Completed VastWaste, an immersive Virtual Reality art experience about space debris, working under artist Ozge Samanci
- Successfully pushed for increased documentation and Git version control to reduce iteration time from ~2 hours to 20 minutes
- Presented work publicly at prestigious international exhibitions including ISEA2022 and SIGGRAPH2022

TECHNICAL SKILLS

Programming Languages: C#, C++, C, Java, Python, SQL, JavaScript, HTML, CSS, XAML, GLSL/HLSL

Technologies: Unity3D/2D, Unreal Engine, .NET Framework (WPF, MAUI), AWS, Jenkins, FMOD, Blender, Linux

Adobe Software: Premiere Pro, Photoshop, InDesign, After Effects, Lightroom

Productivity: Git, Perforce (user & admin), Microsoft Office, Jira, Agile/Scrum, Trello, Confluence, Technical Writing

AWARDS & HONORS

See my LinkedIn for details: <https://www.linkedin.com/in/jack-burkhardt/details/honors/>