Ben Kirchhoff

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Education

The Ohio State University August 2021 – December 2025
Bachelor of Science in Computer Science, Minor in Game Design *Columbus, OH*

Technical Skills

Languages: Java, C#, C/C++, Swift, HTML/CSS, Python, JavaScript, R, x86-64 Assembler
Frameworks/Libraries: scikit-learn, MonoGame, SDL2, SwiftUI, JUnit, Swing, React
Tools: Git, IntelliJ, VS Code, Visual Studio, Eclipse CDT, XCode, Adobe Creative Cloud, npm, RStudio
Professional: Customer Service, Leadership, Team Building, Project Management, Agile Development, Scrum

Work Experience

Data Science Internship May 2024 – Present
The Ohio State University Department of Biomedical Informatics and National Institute of Health *Columbus, OH*

- Evaluated official NIH medical study datasets to create multiple machine learning models (Extreme gradient boosting, Support Vector Regressor, Random Forest regressor and Artificial Neural Network) to predict Bone Mineral Density (BMD) values from phenotype and genotype data.
- Created models tailored specifically for given dataset and developed a custom neural network with backpropogation to fit the needs of the research. Training and Hyperparameter tuning was done utilizing the Ohio Supercomputer Center's clusters.
- Proved the effectiveness of advanced machine learning techniques utilising genotype data to predict quantitative values in a clinical sense, and for BMD prediction in osteoporosis research.
- Presented the result of my research to the OSU Biomedical informatics department.

Research Assistant January 2024 – Present
The Ohio State University Video Games for STEM Education Development Team *Columbus, OH*

- Developed educational video games for STEM education with a multidisciplinary team from Ohio State's Computer Science Engineering Department and Educational Studies Department, emphasizing algebra, physics, Newtonian mechanics, and computer science.
- Provided insights and feedback to enhance game mechanics and educational value, whilst utilizing innovative approaches to bridge theoretical concepts and practical application.
- Demonstrated adaptability and flexibility in responding to evolving project requirements.

Operations Student Assistant August 2023 – Present
The Ohio State University Schottenstein Center Operations *Columbus, OH*

- Facilitated seamless execution of concerts and sports events by meticulous logistics of equipment setup and teardown.
- Contribute to the overall event success through comprehensive maintenance tasks, showcasing a commitment to precision and excellence in every aspect of event operations.

Projects

Legend Of Zelda Clone | *C#, MonoGame, Project Management, Agile, Scrum* August 2023 – December 2023

- Led team of six in creation of game inspired by The Legend of Zelda using C# and the MonoGame engine.
- Played a pivotal role in crafting sophisticated lighting algorithms, contributing to the game's visual ambiance.
- Organized tasks in two-week sprints and conducted regular scrum meetings.
- Used GitHub for efficient collaborations and code reviews.

Sustainability Web App | *Node.js, TypeScript, React* October 2023

- Created a React web application promoting campus sustainability initiatives as part of team at OSU HACKOHI/O.
- Utilized React components to enhance the UI to best display visually captivating graphs highlighting data on water consumption and energy usage.

Hat Trick Soccer | *Game Development, C++, SDL2, UX/UI design, Pixel Art* August 2023 – December 2023

- Creating an original soccer arcade game that incorporates real-life defensive tactics and challenges players to score against progressively skilled defenders.
- Designed original artwork for each level and teams, implementing user-controlled player input via keyboard.

LifeStyle iPhone App (OSU Swift Certification) | *iOS Development, Swift, SwiftUI, XCode* May 2022 - July 2022

- Developed a native iOS mobile application using SwiftUI. The user interface leveraged different views and objects to provide users with questions based on their lifestyle.

Boy Scouts Eagle Scout | *Project Management, SketchUp* January 2009 — January 2021

- Directed the design and construction of a 50 ft bridge over a creek. Created 3D renderings in SketchUp, ensuring the bridge's strength (4000 lbs+) and resilience to weather. Managed logistics for material and machinery delivery and coordinated a team of 30 to complete construction in a single day.