

Overview

Software developer with strong mathematics background. Strong interest in AI and machine-learning.

Projects

Dimensional Dilemma – Unity (2023 – 2024)

A nonlinear first-person physics-based puzzle game with 30+ handcrafted levels

Utilizes replay system to deliver adaptive hints to players based on game state and progression

Regularly collected and implemented feedback from playtesters over 6 months

Human Body Fighter – Unity (2024)

A 2D strategy and defense game about protecting the body from viruses, created in 72 hours for Ludum Dare 56 (Theme: Tiny Creatures)

Collaborated with artists and designer to incorporate sprites, animations, and gameplay balance and design

Noble Warlock – Godot (2024)

A 2D sprite-based platformer with emphasis on aesthetics and animations. Submission to Ludum Dare 55 (Theme: Summoning)

Moon Settlers – Unity (2023)

A base-building survival game set in space with equal parts construction and destruction, made for Ludum Dare 54 (Theme: Limited Space)

Puzzle Battle – Unity (2023)

A 2D tile-matching puzzle game with online multiplayer

Link to portfolio: <https://alexduh.com>

Primary Skills

C#, C++, Python, Unity, Godot, Unreal Engine 5, Git, Visual Studio

Work Experience

UFA Inc. – Software Engineer (2021 – 2022) Burlington, MA

Engineered over 10 unique flight simulations with real-world conditions while adhering to stringent ATC guidelines, contributing to a robust curriculum for effective air traffic controller education

Used Jira, Bitbucket, Confluence, Jenkins to manage tasks and communicate with team in agile environment

Added logging features to improve data analytics for marketing by 15%

Corresponded with customers to handle unexpected simulation behavior

Skills: Jira, Bitbucket, Git, Confluence, C

Sloan Valve – Software Engineer (2019 – 2021) Andover, MA

Developed sensing algorithm that enhanced object detection capabilities, contributing to the successful deployment of advanced features within new product iterations over a 12-month period

Built animated hand-washing LCD application for faucet using Raspberry Pi as controller

Created LCD app for production workers, streamlining manufacturing verification process and reducing overhead costs by over 10%

Devised a 30 lights rack for remote automated system testing and data collection

Setup GitHub, trained engineers, and managed repos to improve software development efficiency by over 35%

Reverse-engineered messaging process using a logical analyzer to assess communication efficiency, leading to a streamlined integration process and reducing development cycles by 20% for future projects

Skills: GitHub, MongoDB, Python, AWS, C, Node.js, Arduino, RS-485, SPI, I2C

Sloan Valve – Intern (2018) Newton, MA

Co-led the development of an IoT system from scratch including Raspberry Pi 3 board, sensors, AWS technologies, database, and web interface

Designed database schema and parsed messages into database tables

Gathered and sent sensor data to AWS, and wrote web app to retrieve and display data

Skills: Git, MySQL, Python, AWS

Education

UIUC - University of Illinois Urbana-Champaign

Mathematics & Computer Science

Miscellaneous

Favorite Games: Outer Wilds, Final Fantasy 6, Legend of Zelda: Breath of the Wild, Super Smash Bros. Melee, Fortnite

Hobbies: Classical piano, rock climbing, dancing