

SOFTWARE DEVELOPMENT PROFESSIONAL

FRONT-END DEVELOPMENT | BIOINFORMATICS | DATA VISUALIZATION & DESIGN

Core Competencies & Technical Skills:

Healthcare Experience Design • Big Data Analytics • Cross-Functional Leadership • Innovative Solutions Development • Concept Art Creation • Systems Thinking • Process Engineering • Technology-Business Alignment • Data Visualization • Design Integrity • Bioinformatics

NOTABLE PROJECTS

Personal Website

Winter 2021

Implemented a personal website using Next.js, TypeScript, React, and Bootstrap, adhering to modern web standards. Architected a modular system for dynamic content rendering, integrated a third-party API for contact form functionality, and optimized for mobile compatibility. Utilized responsive design principles and state management techniques to enhance user experience.

OSMI Mental Health Visualization

Spring 2020

Designed and developed a complex interactive visualization using D3.js, JavaScript, HTML, CSS, and Bootstrap. Employed advanced data manipulation techniques to represent the correlation between mental health discussions and workplace wellness programs. Implemented a temporal slider and sortable criteria, utilizing color scales and chart interactivity to convey insights effectively.

PROFESSIONAL EXPERIENCE

Tomeato Studios., Keene, NH

03/2022 – Current

Game Developer

Worked in Godot 4.1 with the C++-based GDExtension interface to create custom, high-performant extensions for handling hundreds of thousands of game entities

- Created compute shaders leveraging the newly introduced RenderingDevice interface, using GPU processing and compute shaders to process large numbers of entities efficiently
- Implemented various complex data structures such as octrees for nearest-neighbor detection
- Implemented a BOIDS (Bird-oid Object) algorithm to ensure natural unit movement with separation, cohesion, alignment, goal-seeking, and obstacle avoidance behaviors
- Programmed an in-house Entity-Component System with archetypes with interfaces for passing data to buffers easily
- Developed various components and systems, including a custom rendering system that leverages Godot's GPU particle system to perform GPU-based instancing, allowing for rendering of millions of units
- Created algorithms for generation of vector avoidance flow fields with diffusion-based smoothing for obstacle avoidance
- Created various graphic elements, shaders, enemy AI, controllers and UI elements for the game, including an inventory, crafting menus, a formation dialogue, skill tree, and lore catalogue

DELL EMC, Hopkinton, MA

05/2019 – 08/2019

Escalation Engineer

Maintained system availability and reliability, researching root causes to engineer appropriate software solutions. Conferred with system analysts, programmers, and other stakeholders to identify and address barriers to system success. Ensured quality of solutions through system testing or validation processes. Developed solutions within specifications by evaluating factors such as required formats, costs, and security expectations.

- Enhanced parsing and analysis of thousands of customer storage array output files by engineering Perl triage scripts for troubleshooting with NGTRiiAGE
- Pioneered solutions to adopt new storage system types, developing and deploying the fault analysis script for RAID-supported storage pools
- Ensured stability by reviewing virtual and physical storage arrays for distributed systems via Linux command-line tools

EDUCATION

BRANDEIS UNIVERSITY, **Master of Science in Bioinformatics, Waltham, MA** (*Expected June 2023*)
UNIVERSITY OF MASSACHUSETTS, **Bachelor of Science in Computer Science, Linguistics Minor**

CERTIFICATIONS

EdX Molecular Biology (Parts 1-3) Certification

SKILLS

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| <ul style="list-style-type: none">• MERN stack (MongoDB, Express, React, Node.js)• Bioinformatics, organic chemistry, molecular biology• Data structures, algorithms, discrete mathematics• HTML, Javascript, CSS, Bootstrap, REST APIs, d3.js, AWS• Docker, Django• Adobe Photoshop, Illustrator, After Effects, Blender 3D | <ul style="list-style-type: none">• Human-Computer Interaction and UX Design• Linux Command Line, GIT, MySQL, D3.js, Data visualization• Unreal Engine 4, Blueprints, C++• Python, Java, C, Django, Flask • Agile development, Scrum• German (DSH-2), Spanish, French• Design thinking, innovation, craftsmanship |
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