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Education

Bachelor of Computer Science, expected May 2024
College of Science and Engineering, University of Minnesota-Twin Cities, Minneapolis, MN
Minor in Interdisciplinary Design

Notable Coursework

Operating Systems, Machine Architecture, Algorithms and Data Structures, Formal Languages and Automata Theory, Software Design and Development, Functional Programming, Linear Algebra, Discrete Mathematics

Work Experience

Undergraduate Teaching Assistant, Introduction to Data Structures and Algorithms (Fall 2022)

- Led labs, contributed to development of coursework, graded coursework and exams
- Held office hours to teach students course material and help them navigate the computer science program

Prep and Line Cook, Northside Grill (Summer 2021)

- Handled myriad responsibilities in a fast-paced kitchen under the direction of the head cook
- Primarily responsible for cooking on the line and prepping ingredients

Software Development Intern, Advaita Bioinformatics Corporation (Summer 2019)

- Contributed to the development of genetic pathway analysis features for Advaita's iPathwayGuide software using Java, JavaScript, Python, R, and PostgreSQL
- Carried out collaborative software development tasks under AdvaitaBio's lead software developer
- Utilized software development tools and processes such as version control with Git and issue tracking with Jira

Leadership and Activities

Officer (Programming Mentor), University of Minnesota Video Game Development Club (Fall 2022, Spring 2023)

- Mentored game development club members in matters of games programming, contributed to multiple group game development projects, participated in game jams

Undergraduate Research Assistant at University of Minnesota's Interactive Visualization Lab (Spring 2023 - Present)

- Currently contributing to simulation development at the lab as a 3D graphics prgrammer and interaction designer/developer

Skills

Programming Languages

C, C#, C++, Python, Java, GLSL, Swift, Kotlin, OCaml, Javascript, R, PostgreSQL

Tools and Programs

Unity, Unreal Engine 4, OpenGL, Metal, Blender, RenderDoc, Git, Jira, Unix/Bash, Make, GDB/LLDB, Valgrind/leaks, Visual Studio, XCode

Recent Projects

Catalogue and Devil Queller (2022) - Unity 2D/3D, C#, Mathematical animation in 2D, FSM-driven input handling and entity behaviour, composition-based design patterns, 2D and 3D combat mechanics, Unity CG shaders, spatial partitioning and triangulation for navigation

API Graphics Programming (2018-Present) - C/C++, Swift, OpenGL, Metal, Vulkan, graphics pipelines, shader programming, resource loading and management, ECS architecture, application of linear algebra to graphics

Graphics and Algorithms/Data Structures (2016-Present) - Polygon rasterization renderer, ray tracing renderer, NFA-based regex matcher, BMP image processing library and example implementations of image processing algorithms, OBJ mesh loading library, all from-scratch in standard C

Interactive Visualization Lab Research (2023-Present) - Unity 3D, C#, Unity CG shaders and Compute shaders, design and development of simulations/interactions in a 3D virtual environment, 3D modelng and animation

Art and Design (2021-Present) - Sketching in 2D and 3D, contour/structure/value drawing, still-life/figure/architectural drawing, illustration, typesetting, letterpress printing, packaging design and construction, bookbinding