Liam Bessell

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EDUCATION

TEXAS A&M UNIVERSITY

B.S. in Computer Science
Fall 2017 - May 2021
College Station, TX
GPA: 3.9 / 4.0
Engineering Honors

COURSEWORK

Computer Animation
Networks and Distributed Processes
Computer Graphics
Artificial Intelligence
Analysis of Algorithms
Software Engineering Studio
Introduction to Computer Systems
Data Structures and Algorithms
Programming Languages
Computer Organization

SKILLS

PROGRAMMING LANGUAGES

Experienced:
C/C++ • Python • Java

Familiar:
C# • Bash • GLSL
JavaScript • HTML • CSS
Haskell • Matlab • Assembly

TECHNOLOGIES

Experienced:
Git • Visual Studio • Spring Boot
Decompilers (dnSpy)

Familiar:
OpenGL • PostgreSQL • AS3
Jupyter • React

AWARDS

USAA IAP Scholarship Recepient: Fall 2019 - Spring 2021
Eagle Scout: Fall 2016

EXPERIENCE

AMAZON

Software Engineering Intern
June 2020 – August 2020 | Seattle, WA (Remote)

- Implemented dual write functionality to multiple Java back-end services to help deprecate an old service.
- Created a daemon using Java and Spring Boot to automatically find and and log differences in dual write records.

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY

Software Engineering Intern
May 2019 – August 2019 | Laurel, MD

- Automated my team's git workflow with a Python hook to run static analysis tools on committed code.
- Created a mobile web application using JavaScript and Python that displays live information about nearby planes and marks their position on a map.
- Collaborated with a team to process plane data and classify aircraft using data science models in Python.

RESEARCH

DAYLIGHTING IN VIRTUAL REALITY

Undergraduate Research Scholar
August 2020 - Present | College Station, TX

- Implemented two methods for viewing Radiance HDR scenes in virtual reality on the Unity game engine. The first method uses cube maps while the second uses orthographic projections.
- Collaborated in a cross-disciplinary team to better understand the needs and direction of the research.

COVID-19 MOBILITY NETWORKS

Urban Resilience Lab Civic Analytic Fellow
March 2020 - May 2020 | College Station, TX (Remote)

- Implemented an algorithm in C++ to find hotspots in a mobility network based on visits between nodes. Multi-threaded the program in order to compute hotspots in large networks quickly. Our work culminated in a published paper.
- Worked in a cross-disciplinary team of data scientists, software engineers, and civil engineers to analyze COVID-19 data and publish our results.

PROJECTS

N-Body Simulator

- Implemented the Barnes-Hut algorithm to simulate n bodies acting on every other body in real time.
- Project was ranked number one in my Computer Animation class.

Ray Tracer

- Created an offline ray tracer from scratch in C++.
- The program can render reflections, shadows, multiple lights, and complicated models built with triangles.