Mitchell Nelson

nels4929.github.io | nels4929@stthomas.edu | 507-271-57611 | nels4929

EDUCATION

University of St. Thomas — **Saint Paul, MN**

BS in Computer Science - Major GPA: 3.96/4.0 — *Expected Graduation: May 2020*

- President of Computer Science Club
- Dean's Honor List - All semesters

EXPERIENCE

Software Engineer Intern — **Eagan, MN**

Leidos — *June 2019 - August 2019*

- Improved a release up-leveling tool, used internally as well as by the FAA, to test air traffic management data
- Expanded the use cases of the tool by allowing XML to be processed in addition to binary inputs
- Implemented an XML parser that reformats custom data structures according to differences in source and target releases
- Utilized skills in C++, Boost, KornShell, Git, Linux

Researcher — **Saint Paul, MN**

University of St. Thomas — *September 2018 - May 2019*

- Programmed high performance parallel code to optimize GPU performance for bit-map compression
- Developed test suites to measure execution time of code run on both a CPU and GPU
- Concluded that 85% of the GPU tests provide up to 33.25 X speedup over the parallel CPU implementation
- Utilized independent work and learning skills, CUDA, C++, Bash, GNU Debugger

Grading Assistant — **Saint Paul, MN**

University of St. Thomas — *September 2018 - May 2019*

- Evaluated and graded weekly projects coded by students taking an introductory programming course

Web Development Intern — **Saint Paul, MN**

University of St. Thomas — *February 2018 - August 2018*

- Developed a responsive intranet homepage geared for student productivity to be used as the default homepage for all students using on-campus computers (8,000 visits per day)
- Tested front-end code across a variety of devices and browsers spanning a wide range of screen resolutions

SELECTED PROJECTS

More projects available at nels4929.github.io

Computer Vision Drum Simulator

- Allows users to "air drum" in front of a webcam while hearing realistic drum sounds for each "hit"
- Tracks two colored drum sticks and calculates "hits" based off changes in downward movement
- Utilized knowledge in Python, OpenCV, NumPy

Collaborative Music Creator

- Interactive web application that gives multiple users the power to create a collaborative drum beat in real time
- Syncs user interactions, such as play/pause, rhythm changes, and new sounds across users in a session
- Utilized knowledge in JavaScript, Node.js, WebSocket, Vue.js, Git

Skills

Proficient: C, C++, Javascript, Python

Familiar: Java, R, Node.js, jQuery, SQL, HTML/CSS