






# Jesse Both

Computer Engineer

 Portfolio  GitHub  LinkedIn  jesse.both9@gmail.com

 (716) 218-9712



## EDUCATION

### STATE UNIVERSITY OF NEW YORK AT BUFFALO

#### BACHELOR'S OF SCIENCE IN COMPUTER ENGINEERING

Fall '18 – Spring '22

- GPA 3.57 / 4.0
- Dean's List: Fall 2021, Spring 2021

## EXPERIENCE

### TEACHING ASSISTANT | STATE UNIVERSITY OF NEW YORK AT BUFFALO

Fall '21 – Spring '22

- **Course: Introduction to Microprocessors**
  - Hosted lab sessions to assist students with ARM assembly topics and assignments with Tiva-C microprocessor.
  - Conducted office hours and provided additional lecture materials to students.
  - Assisting departmental officials in grading and student assessment after a semester.
- **Course: Computer Organization**
  - Conducted lab sessions to assist students with MIPS assembly concepts and assignments with QtSpim.
  - Hosted office hours and aided departmental officials with lecture and project content.

## PROJECTS

### ROBOTIC ALGORITHMS | C++, LINUX

- 2022
- Implemented algorithms like BUG2 and A\* using ROS (Robot Operating System).
  - Applied concepts of data structures and algorithms to find the most efficient path for the robot to move according to the algorithm.
  - Utilized linear algebra and odometry data of the simulation to produce movement and obstacle avoidance skills for the robot.

### GAMES ON MICROPROCESSOR | C, ARM ASSEMBLY, TIVA-C MCU

- 2021
- **2048**
    - Implemented the game 2048 with C and assembly in order to explore the interaction between the two.
    - Utilises displays in the terminal via UART and can be controlled with key WASD or a 4x4 matrix keypad.
    - Implemented by the university as the final project (Spring 2022) of Introduction to Microprocessors.
  - **FlowFree**
    - Implemented completely in Assembly.
    - Utilizes visual interfaces like the terminal to output with keyboard keys WASD as input.

### CALENDAR | SCALA, JAVASCRIPT, HTML/CSS, SHELL, RASPBERRY PI

- 2020
- Initiated the implementation of a program to stay organized when all classes moved online due to the pandemic.
  - Designed to display the days schedule, running on a Raspberry Pi.
  - Parses data from Google calendar in Scala and displayed data by a webpage.
  - Runs shell scripts at startup to initialize the system.

## SKILLS

### PROGRAMMING

Proficient:

C • JS • Python  
Assembly (ARM, MIPS, x86)

Experienced:

C++ • Scala • HTML/CSS  
L<sup>A</sup>T<sub>E</sub>X • Verilog • MATLAB  
AutoHotKey

Familiar:

Lua • Shell

### HARDWARE

ARM Cortex-M4 • Arduino  
Raspberry Pi • Teensy • Nucleo  
NodeMCU • 3D Printing

### SOFTWARE

Git • VirtualBox • Fusion 360  
Excel • Microsoft Office • ROS  
Xilinx • IntelliJ • VScode

### OPERATING SYSTEMS

Windows • Ubuntu • macOS

## COURSEWORK

### SOFTWARE

Robotic Algorithms  
RTOS / Embedded  
Operating Systems  
Data Structures  
Systems Programming  
Computations Intelligence

### HARDWARE

Integrated Systems  
Embedded Controls  
Microprocessors  
Electronic Devices  
Circuit Analysis