

Gerard Butler

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SUMMARY

Senior B.S. Computer Engineering student at MSOE with extensive hands-on, team-based engineering project experience. Skills in C, C++, Java, VHDL, Verilog, Python, MATLAB, Virtual Machines, and Linux.

EDUCATION

B.S. Computer Engineering | Milwaukee School of Engineering | GPA: 3.2 | Expected November 20XX

PROJECT EXPERIENCE

Senior Design Project (Team of 5) | Industry Sponsor: TAPCO (In Progress)

School Bus Warning System Project: Design and create a bus warning system that sends alert to oncoming drivers when school bus is stopped and allowing children on/off.

- Programmed TAPCO's off-the-shelf Danlaw On-Board Units and Roadside Units to communicate with each other through C-V2X.
- Wrote python scripts to send and receive packets of data that contained information about vehicle position, speed, heading, etc.
- Wrote python code using PyBluez to establish Bluetooth connection with on-board units to Android app

Incremental Design of a Custom Embedded System Project

Objective: Design software using VHDL and C programming to interface with multiple peripherals on Terasic FPGA and deploy implementation on SoC computer.

- Developed custom peripherals in HDL using system-on-chip and memory-map concepts.
- Generated custom PWM signal generator, added to SoC base computer, and deployed to hardware.
- Generated API for control of complex peripherals (LCD, accelerometer, servo motors, etc.) via I2C and/or SPI serial protocols.

GUI Drawing Application Project

Objective: Develop program in Linux using C++ to display numerous 2D and 3D images with drawing, save, load, fill, rotation, and size increase functionality.

- Created matrix class to hold shapes in xyz plane, as well as provide various matrix operations and error detection: assignments operation addition, multiplication, transposing, and editing matrix values.
- Developed program to allow user input to draw lines and circles using class hierarchy and polymorphism features of C++.
- Added click detection and event driven drawing to allow preview, drawing, and hover functionality with mouse and keystrokes.
- Developed program to add ability to modify image with scales, translations, and rotations, as well as 3D rotation across x and y axis.

TECHNICAL SKILLS

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| ▪ Java | ▪ Terasic FPGA Boards | ▪ ARM Assembly |
| ▪ C | ▪ VHDL | ▪ Python |
| ▪ C++ | ▪ Verilog | ▪ STM Microcontrollers |
| ▪ MATLAB | ▪ Linux | ▪ Virtual Machines |

WORK HISTORY

Customer Service Representative | Kroger | Milwaukee, WI | November 20XX – December 20XX