

BAKNEL JAMES MACZ

COMPUTER ENGINEERING

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Available For 4, 8, 12, 16 Month Terms

Key Skills

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|----------------------|-------------------|-------------------------|
| ➤ Programming | ➤ Hardware | ➤ Tools/Software |
| ○ C | ○ Verilog | ○ Git |
| ○ Python | ○ I2C | ○ Quartus |
| ○ C++ | ○ SPI | ○ ModelSim |
| ○ Java | ○ Microcontroller | ○ FreeRTOS |
| ○ JavaScript | programming | ○ Linux |

Technical Projects

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- Member of UBC Orbit, satellite design team (launch scheduled late 2021)
 - Part of the team designing the On-Board Computer
 - Designed I2C, SPI firmware in C, and implemented on a TMS570 MCU running FreeRTOS
 - Hardware configuration done using HALCOGEN
 - 16-bit RISC (reduced instruction set) computer
 - CPU built from first principles on an FPGA programmable board
 - Designed an ALU, registers, and datapath for a pipelined CPU
 - Using Verilog HDL and Quartus for synthesis, route and place on FPGA
 - CPU runs subset of AMD x86 Assembly
 - Various robotics projects
 - raspberry pi 4 running Debian Linux and using Python
 - Arduino Nano using C++
 - controlled stepper and servo motors as well as various sensors
 - distance sensors, light sensors, GPS, accelerometers and gyroscopes

Experience

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| ➤ Server Lead , Tap and Barrel Shipyards | 2018-2020 |
| ➤ Shift Supervisor , Starbucks | 2015-2017 |
| ➤ Guard Manager , Fort York National Historic Site | 2011-2015 |

Education

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- University of British Columbia
 - Bachelor of Applied Science, **Computer Engineering**
 - 3rd year CO-OP student, degree expected 2023