Gavin Unrue

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EDUCATION RELEVANT SKILLS

**University of Colorado Boulder, 2022-2025**BS in **Electrical, Computer and Energy engineering ECEE**, GPA: 3.2/4   
Courses taken: Embedded software, Electronics Design lab   
 Circuits as systems, Discrete math, Modern Science and Society   
 Differential Equations w linear algebra, Microelectronics

Languages:  
• C/C++ • Python   
• VHDL   
• Java   
• JavaScript   
• Batch Scripting  
• Shell Scripting  
• Html/CSS  
• Linux

Hardware Dev:  
• FPGA/Circuit design   
• Multisim  
• LT Spice  
• Symmetrix  
• Filter Design  
• Amplifier Design  
• Computer architecture  
• Processor design  
• I2C protocol

Software Dev:  
• GitHub  
• Jira  
• Scrum  
• Shapefiles  
• Algorithms  
• Data structures  
• Embedded Software  
• RT Operating systems  
• Debugging  
• Problem Solving  
• Development boards

**Metropolitan State University of Denver, 2019-2022**BS in Computer Engineering, GPA: 3.4/4.00  
Courses taken: Digital Fundamentals 1 & 2, C Programming,  
 DC/AC Circuits, Computer Organization 1 & 2, Calculus 1,2,3,   
 College Algebra & Trigonometry, Computer Science 1 & 2,

General Physics 1&2, Principles of Micro & Macroeconomics, Intro to logic

WORK EXPERIENCE  
  
**SciTec, Inc** (Software Dev Intern) **(June 2024-August 2024)**   
• Created new library to assist in geodetic-coordinate operations • Extensive use of shapefiles and vector operations.   
• Temporary security clearance granted until full security clearance is processed. • Used C++, Shell Scripting, Python, Linux, Scrum, GitHub and Jira   
   
**Amazon delivery driver**, (**June 4th 2023- August 19th 2023)**

NOTABLE PROJECTS \*Photos, and documentation on GitHub  
[**Remote controlled robot**](https://github.com/O11WL1D/EDL_robot)**, 2023** (Electronics design lab, CU Boulder)

•Robot featuring a Cruise control system, remote controls and an Arduino interface. •Utilized negative feedback via filters, and implemented Bluetooth controls via HC-05 Module. • Utilized Analog to PWM conversion, voltage level converters, h-bridges, hardware interrupts and Opamps.

[**Pearl Gecko i2c driver**](https://github.com/O11WL1D/pearlgeckoi2cdriver)**, 2023** (Embedded software, CU Boulder)

• Driver which communicates with Pearl Gecko’s onboard humidity sensor via i2C protocol

• Features a scheduler, Energy mode switching, Usage of onboard timers, Usage of GPIO ports, Software state machine.

[**16 bit Processor**](https://github.com/O11WL1D/16_bit_computer)**, WIP (**Independent study)

• FPGA design implemented on DE0-CV dev board • Adjustable-frequency Clock, reg-file with three read/write ports, ALU with bitwise operations • Planned features include interrupt based multiprogramming, transparent module memory sharing, peripheral keyboard module,

[**8-bit Processor**](https://imgur.com/gallery/ben-eater-inspired-8-bit-computer-made-with-ttl-chips-DWOHOov)**, 2019** (Independent study)

• Assembly of discrete logic, 8-bit breadboard computer capable of performing 7 instructions,

• Utilized following modules: RAM, control unit, PC/instruction register, 2 temp registers, clock, binary to decimal display, ALU

VOLUNTEER WORK

[**Eagle Scout Project**](https://imgur.com/a/eagle-project-photos-Nc4KxzZ)**, Troop 324 - 2019** \*Photos and documentation found on GitHub

• Project management of two elevated, ADA compliant garden beds for wheelchair bound and elderly gardeners

• Fundraised $1200 worth of materials • Total of 217 service hours logged • Management of adult and scout volunteers

• Designed garden beds and concrete platforms.

**Other volunteerism**• Assisted fellow scouts in their Eagle projects: book libraries, park benches, bird houses, tree planting, etc.

• Assisted Salvation army soup kitchen. • Adult volunteer for scout ice fishing trip, assisted in assembling tents/snow shoveling, etc.

• Volunteered for front range community library summer reading program • Scout groundskeeping for public garden and church

CLUBS HOBBIES AND ACHIEVEMENTS

• Weightlifting club (CU) • Chess club (CU) • Summer 2020 Provost honor roll (MSU) • Adams Country AIM scholarship (MSU)

• High School French - 3 years • Northglenn High School Coding Club (sophomore year - senior year)

• Sea Scouts - scuba certified, Troop 324 Westminster Colorado • Arrowman - Troop 324 • Denver Urban Gardens - Gardener (2014-2019)