

# Matt Nicklas

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## Education

- **Virginia Polytechnic Institute and State University** Blacksburg, VA  
*B.S. Electrical Engineering, Energy and Power Electronics Systems* Aug. 2016 - May 2020
  - GPA: 3.61/4.00. Academic Level: Junior.

## Experience and Projects

- **Human Powered Submarine Design Team** Blacksburg, VA  
*Electronics team* Oct. 2016 - May 2018
  - Designed and tested main PCB, including circuit schematic, simulation, BOM generation, part sourcing, part footprints, board layout, and final assembly
  - Integrated C++ code for autonomous control and implemented version control using Git
  - Created Documentation for other team members to reference
- **Automotive Tachometer** Jun. 2018
  - Designed modular LED tachometer based on ATtiny84 microcontroller programmed in C
  - Built custom PCB using shift registers, transistor arrays, and 5050 chip LED's, reflow soldered
- **Small Engine Control Unit** Aug. 2018
  - Developed low power control unit for 15 hp single cylinder engine
  - Programmed in C on 8-bit ATtiny84 and later 32-bit ARM MSP432
  - Implemented electronic timing using hall effect sensors and pressure sensors as inputs
  - Designed and built MOSFET driver board, including simulation, PCB layout and reflow soldering

## Skills

*Computer:* Linux/Unix, EAGLE, Git, SPICE, L<sup>A</sup>T<sub>E</sub>X, MS Office, AutoCAD, Inventor, KiCAD

*Programming/Scripting:* C, C++, Arduino, MATLAB, Bash

*Technical:* PCB Layout, Circuit Design/Prototyping, Soldering, Test Equipment (DMM, Oscilloscope, Function Generator, etc.)

## Leadership

- **Boy Scouts** Vienna, VA  
*Eagle Scout* Apr. 2016

## Work Experience

- **Town Of Vienna Parks Department** Vienna, VA  
*Seasonal Employee* May 2018 - Aug. 2018
- **Virginia Outdoor Power Equipment** Fairfax, VA  
*Shop Assistant* Jun. 2015 - Aug. 2015