Giselle Koo | Boulder, CO | gisellegk@gmail.com | gisellegk.github.io

Education

University of Colorado, Boulder
BS Electrical & Computer Engineering
GPA: 3.98. Exp. graduation: Spring '22

Tunxis Community College
A.S. Engineering Science
Grad w/honors, Spring 2019, *GPA*: 3.54

Technical Skills

Electrical: Soldering (SMD/TH), PCB design, mbed, Arduino/ATMega, TI MSP432 & TIVA C platforms, LTSpice/PSpice, Autodesk Eagle, FPGA/Verilog, DMM, Oscilloscope

Code: C/C++, Arduino, Java, LabVIEW, Matlab, HTML/CSS/JS, Node.js, UNIX/Linux CLI, Git/GitHub

Misc: TIG Welding, Model Rocketry (NAR L1), HAM Radio (KC1KKR), Autodesk Inventor (CAD), 3D printing

Awards & Honors

Brooke Owens Fellowship:
Class of 2020 BOF Semifinalist

NASA Community College Aerospace Scholars:
Online experience grade: 100%, CAPCOM award at LaRC on-site session, 4/2019. Selected to work as a Student Assistant, 6/2019 session.

NASA CT Space Grant Consortium:
Summer 2019 Research grant, Summer 2018 Education Intern, Fall 2017 Community College Scholarship

WiCHacks 2017:
"Light Code" won Best UI, Best Hardware Hack, Displayed in MLH Office Gallery

OSHWA 2017:
Open Source Hardware Summit 2017 Ada Fellow

Work Experience

Computer Lab Assistant, Silas Deane Middle School
Wethersfield CT | Aug '14-Jul '16
- Supervised computer labs, coordinate use of school's electronic devices.
- Led professional development workshop on Google products.

Team Member, Jo-Ann Fabric & Craft Stores
Newington CT | Apr '17 - Mar '19

Extracurricular & Volunteer Experience

FIRST Robotics Competition Team #178 **Sept 2013 - July 2019**
- Served as a mentor for high school students. Fostered students' technical and management skills during robotics challenge.
- Focused on electrical/programming, web design, project management, rapid prototyping, esp. inspiring female members.

Let's Build Rockets Inc. **Jan 2015 - present**
- Established non-profit to promote STEM education through amateur rocketry and robotics development/outreach.
- Develops open-source rocketry data acquisition, visualization tools.
- Directs projects including rocketry payload electronics development, PCB kit design, and website database design.

CU Sounding Rocket Lab **Aug 2019 - present**
- Develops avionics hardware and software for high power rockets
- Electronics and code for cold gas reaction control system team

CU Robotic Mining Team **Aug 2019 - present**
- Develop electrical systems for NASA lunar mining robotics competition team. PCB design, parts selection, aid software and mechanical teams with design decisions at a system level.

Projects

Avionics Payload - Embedded Systems Final Project **Fall 2019**
- Led team of 3 to design datalogging and RF recovery system for model rockets. Managed concurrent development, milestones
- Conducted trade studies based on LTSpice simulations and analysis, designed modular PCBs including RF transmitter. Utilized hardware UART, I2C on MSP432 to communicate with peripherals.

RocketSat 13 - COSGC **Sept 2019 - present**
- Develop avionics system and related test procedures for sounding rocket experiment to test passive solar panel deployment system.

Astronaut AR Visualization Tool - CCSU/CTSGC **June-Aug 2019**
- Develop proof-of-concept Augmented Reality system to aid in simple visualization and issue diagnosis for satellite repair.
- In charge of model satellite used for demo: CAD for 3D printing, selecting and integrating sensors and bluetooth

Trinity Fire Fighting Robot Competition **Dec 2016 - May 2018**
- Design and build autonomous robot to navigate a maze and locate and extinguish a candle in the shortest period of time
- Utilize Robot Operating System (ROS), SLAM algorithm using LIDAR data, OpenCV and IR sensor to locate flame
- Awarded Outstanding Robots in Connecticut by IEEE CT '17, '18

Student Sounding Rocket - Discovery Museum, CT **June-Aug 2018**
- Design and build payload for high powered model rocket in order to relay student-built telemetry over ISM radio during flight.
- Create custom PCBs using Autodesk EAGLE and combined 3D printing and traditional machining to fabricate mechanical parts.

Satellite Tracker "3000" - UHacks 2017 **November 17-19, 2017**
- Used SGP4 algorithm and Space-track TLE data on mbed platform to calculate altitude & azimuth of a user-selected satellite, then point a 3D printed "arm" at it, adjusting as the satellite moves.

Horizon Tracker - Let's Build Rockets Inc. **Jun 2017 - Sept 2017**
- Supervise intern work on horizon tracker payload for model rocket.
- Use Open CV and Raspberry Pis to determine orientation of rocket based on the angle of the horizon from camera images