

# Arielle M. Blum

2445 Kittredge Loop Drive, Boulder Colorado, 80309

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## Education

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### University of Colorado at Boulder

MS Electrical Engineering Electromagnetics/RF

Fall 2012 – Spring 2015

### University of Colorado at Boulder

BS Electrical Engineering with Biomedical Option

Fall 2019 – Spring 2012

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## Professional Experience

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### Faculty Instructor, Freshman Engineering Projects

Summer 2014 - Present

*College of Engineering & Applied Science – University of Colorado, College of Engineering and Applied Sciences*

Curriculum design, development, and iteration of an interdisciplinary, freshman engineering, group project course, COEN 1400. Introducing students to the engineering design process, technical documentation, formal design reviews, systems engineering, programming (Arduino, Raspberry Pi, etc.), PCB design, mechanical CAD, additive manufacturing, machining, laser cutting, and more. Teaching the course five times per academic year for the Pre Engineering program.

### Lecturer, Exploring ECEE

Fall 2017 & Fall 2018

*Electrical, Computer, and Energy Engineering – University of Colorado, College of Engineering and Applied Sciences*

Exploring ECEE, ECEN 1100, a one credit hour course which exposes EE and ECE freshman students to the opportunities within academia and industry. Responsible for curriculum development, recruiting guests from the college, department, and industry, to provide students with first-hand real world perspective. Created learning assessments and prepared feedback for each student in course, course enrollment 85+ undergraduate students.

### Tutor

Fall 2016 - Spring 2017

*Global Engineering Residential Academic Program – University of Colorado, College of Engineering and Applied Sciences*

Provided drop-in, tutoring services for the RAP two nights per week, on a weekly basis, for the following courses: APPM 1350, APPM 2250, APPM 2350, APPM 2360, CSCI 1300, CSCI 2270, CSCI 2824, all ECEN courses, PHYS 1110, PHYS 1120, PHYS 2130, and more. Provided mentorship in all facets and promoted community.

### RF Design Engineering Intern

Spring 2014

*Holzworth Instrumentation*

Assisted in the development of a low phase noise, RF synthesizer, in a rapid development environment.

### Grader, Circuits as Systems

Fall 2013

*Electrical, Computer, and Energy Engineering – University of Colorado, College of Engineering and Applied Sciences*

Worked for guest lecturer, Jeries Shihadeh as a grader for ECEN 2260, created and graded course assessments to ensure students understood material.

### RF Design Engineering Intern

Summer 2013

*TriQuint Semiconductor via Volt Workforce Solutions*

Developed a workbench in ADS for analyzing linearity of RF power amplifiers with LTE, W-CDMA, and TDMA input. Designed two-stage class A power amplifier using HBT process. Conducted analysis for feasibility of various matching circuits. Worked alongside Project Manager in order to develop and populate project definition specification document.

### Lead TA and Learning Apprentice “Meaning of IT”

Fall 2012

*Herbst Program – University of Colorado, College of Engineering and Applied Sciences*

Worked for the Associate Dean of Education, College of Engineering, Professor Diane Sieber. Duties included assisting students, developing course material, giving an occasional lecture for 80 students, IT support, assisting in the development of quizzes and midterms.

## PCB Design

Summer 2012

*Electrical, Computer, and Energy Engineering – University of Colorado, College of Engineering and Applied Sciences*

Design and layout of video encoder/decoder schematics using Altium 2009, with adjunct Professor Samuel Siewert. The aim of the project was to provide an educationally minded interface for students to develop and expand their knowledge of digital media and real-time embedded systems. This interface provides hands-on access to both hardware and software aspects of this camera system which can be useful for observing the application of different resolutions, pixel encoding, and frame rate decimation.

## Project Manager, Ground Station

Summer 2011

*Colorado Space Grant Consortium – University of Colorado, College of Engineering and Applied Sciences*

Assisted with the manual construction of an S-Band ground station antenna for tracking amateur satellites. Worked on improving reliability of portable tracking stations for BalloonSat missions by evaluating power supplies and integrating new software. Analyzed characterization of VHF/UHF antenna system in order to purchase proper circulator.

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## Service Experience

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### Faculty Advisor and Founder, CU Quadcopter Club (CU Aerial Robotics Club)

Spring 2015 - Present

*University of Colorado, College of Engineering and Applied Sciences*

Created an interdisciplinary club and mini-quad curriculum to rapidly develop the base knowledge of new members through a series of technical workshops CAD, 3D printing, composites, programming, electronics, flight training using the RECUV flight space. The goal of the club is to prepare interdisciplinary, undergraduate and graduate CU students, ~25 members, for industry through the design of autonomous aerial swarm robotics. The club is working towards participating in the International Aerial Robotics Competition, IARC, using a custom swarm, featuring: Raspberry Pi 3 running ROS for Machine Learning, SLAM, PixHawk 2, custom mechanical frame using composite materials. Responsibilities include design, analysis, project management, formal design review, procurement, fund raising, teaching, outreach, recruitment, attending weekly meetings, etc.

### Judge, Mentor, Volunteer, HackCU

Spring 2015 - Present

*University of Colorado, College of Engineering and Applied Sciences*

Technical assistance, troubleshooting, logistics, coordination for 24 hour Hackathon with ~100 attendees in the first year and this year more than 500 attendees from CU and other national Universities. Responsibilities are generally limited to the day before or day of the event. HackCU is associated with MLH and has many industry sponsors. <https://hackcu.org/>

### Faculty Advisor, CU Hyperloop

Fall 2017 - Present

*University of Colorado, College of Engineering and Applied Sciences*

Assisted undergraduate Aerospace Engineering student, Cole Kenny with establishing a new CEAS club at CU to participate in the SpaceX Hyperloop competition. During the first year of participation within the international collegiate competition and with only ~5 interdisciplinary undergraduate students, the team advanced and was invited to observe the competition at SpaceX in LA. For the 2019 competition cycle, CU Hyperloop established a 5 person, senior design Capstone team, ECEN 4610 within the ECEE department, to design and develop the electrical control and navigation systems. CU Hyperloop has more than 45 active interdisciplinary, undergraduate and graduate, CU student members, the team has generated a more than 100 page design documents, not including the hundreds of pages of analysis, and simulation documentation. Responsibilities include design, analysis, project management, formal design review, procurement, fund raising, teaching, outreach, recruitment, attending weekly meetings, mentorship, etc. <http://cuhyperloop.com/>

### Faculty Advisor, ACM Women in Computing - Student Chapter

Fall 2017 - Present

*University of Colorado, College of Engineering and Applied Sciences*

Faculty advisor for professional society through the Association for Computing Machinery, Women in Computing, promotes diversity with academia and industry with a focus on Computer Science. Mentor advisory committee of undergraduate students, ~10 students, in CS related majors in the planning, logistics, execution of professional and technical development events for students at CU with industry sponsors: Google, Seagate, Lockheed Martin, Twitter, Zayo, Splunk, etc. Work in conjunction with the BOLD Center and CS department to promote community and inclusion. The student chapter has more than 50 members at CU. <http://wic.cs.colorado.edu/>

### Faculty Advisor, CU Racing Team

Fall 2017 - Present

*University of Colorado, College of Engineering and Applied Sciences*

Interdisciplinary Formula SAE racing team and Endurance racing team, with more than 80 active undergraduate and graduate members, that design, manufacture, and race in the collegiate competition. Work with the student advisory committee to assist with fundraising, sponsors, logistics, etc. <https://buffsracing.com/>

**Faculty Advisor, Electrical Car Club****Summer 2018 - Present***University of Colorado, College of Engineering and Applied Sciences*

Founded by ECE and EE undergraduate students, this interdisciplinary team is focused on developing an electric vehicle by retrofitting a Go Kart with custom electronic control, electronics, and manufacturing. Mentorship concerning logistics, scheduling, operating within the University recruitment, project management, etc. <https://cuelectriccar.com/>

**Faculty Advisor, CU Combat Bot Club****Fall 2018 - Present***University of Colorado, College of Engineering and Applied Sciences*

Assisted ECE undergraduate student, David Kopala, with founding a competition battle robotics club. Recruiting interdisciplinary undergraduate students, developing the base knowledge of members, raise funds through grant writing, logistics, etc. Club is in its infancy with a strong following of 10 students. The team plans on participating in beetle weight competitions: <https://robobears.berkeley.edu/>

**Faculty Advisor, Electrical Engineering Student Society and IEEE Student Chapter****Fall 2018 - Present***University of Colorado, College of Engineering and Applied Sciences*

Mentoring students with establishing a club within the ECEE department to promote community, interface with industry, and provide skill-building opportunities targeted at EE and ECE undergraduate and graduate students.