

Colt Darien

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Education

2012–2016 **B.S. Computer Engineering, C.S. minor**, *Colorado State University*, Fort Collins.

Experience

2010–Present **IT, Zag Built**, 'A builder of unique homes' Zag Built has spent the last 12 years becoming Mesa County's premier home builder (zagbuilt.com).

- Network Setup: wireless and wired connections to all devices, networked directories, and remote access to machines
- Hardware Support: new device setup for Laptops, All-In-One PC's, Tablets, and Phones
- Maintenance: virus removal, machine upkeep/cleanup, machine optimization

Senior Design

2015–2016 **Brain Controlled Smart Home**, Supervised by: Dr. Sudeep Pasricha.

(projects-web.engr.colostate.edu/ece-sr-design/AY15/smart)

Worked on a team of 3 with smart home devices, and brain control technology in order to allow disabled users to be more independent and comfortable in their own homes.

- Wrote 'Cognitive Control' Code to allow users to:
 - control smart home devices (including lamp and power strip) using only thoughts
 - interact with Virtual Reality devices using only thoughts
- Built Virtual Reality using Unity 5 Engine so that users could:
 - test 'Cognitive Control' in a safe and cheap home environment
 - train with the software before controlling real smart devices

Extra Curricular

2012–2016 **Hashdump Security Club**.

A computer security club at CSU where students teach each other about new security principles and threats.

(hashdump.org)

- Member all four years of school at CSU
- Officer during Junior and Senior years
- Rocky Mountain Collegiate Cyber Defense Competition (RMCCDC):
 - CSU was the only team to compete that was not sponsored by a class, or organization (all members self taught)
 - 2nd place out of more than a dozen teams in 2016 competition

Coding Languages

- C++ Intermediate: Used in school as well as most of the code for Brain Control Project
- Java Intermediate: Used for a majority of classes that required students to write code
- Golang Intermediate: Used to test implementation of hybrid cryptography based communication
- Python Intermediate: Used for quickly writing code to test designs
- Bash Beginner: Wrote basic scripts for ease of use on linux
- LaTeX Beginner: Used for this document and a few in class assignments

Computer skills

- Linux Familiar with 'apt' and 'pacman' package managers. Moderate linux administration knowledge. Very comfortable with linux
- VCS Used 'git' and github for several projects including Senior Design and scratch build keyboard firmware
- Microcontroller Have worked with Arduino, Teensy, and Raspberry Pi for several projects including scratch build keyboard, automatically unlocking dorm room door, and backlighting for entertainment system and music

Relevant Course Work

- Operating Systems (CS370) Covered such topics as: Processes and thread management, Scheduling algorithms, Memory management concepts, Interprocess communication, Synchronization, Deadlocks and resource management, File System and storage architecture, Symmetric multiprocessing, and Virtualization
- Computer Organization and Design (ECE 451/452) extended CS370 and also went in depth with chip design paradigms as well as problems facing the technologies
- Hardware/Software Design of Embedded Systems (ECE561) Extended ECE452 further and covered topics like power, system level modeling, design space exploration, hardware-software partitioning, high level synthesis
- Computer Security (CS356) explored some of the security measures that can be employed to safeguard systems and the information contained therein. Covered topics such as buffer overflows, SQL injection, XSS, pathname attacks, etc
- Software Engineering (CS314) Teams were assigned and tasked with projects that included full revision control. Teams used SCRUM, and talked about 'agile' project management
- Computer Networks (ECE456) covered the networking stack architectures, TCP and UDP communication, and socket programming

Hobbies and Interests

- Longboarding
- Mechanical Keyboards
- Android OS/Application Development
- Airsoft