**ESSAY QUESTIONS**

1. My first endeavor in CS happened in middle school in a popular sandbox game called Garry's Mod. Players have the ability to build things like vehicles, mech-bots, and structures, and to aid in the players abilities to create, the game provides a control system with wiring, different computer chips, and a basic computer language called E2. Through E2, I learned about conditional logic, loops, advanced mathematical expressions, I/O, vectors, arrays, and more. Since then, I have sought to learn more about computer software and hardware, primarily through online sources. In high school I was focused on the design and construction of computer hardware and read about chip manufacturing and digital logic. It wasn't until college that I studied C++, Python, and Verilog HDL in my coursework, but since picking up these languages, I've began learning HTML, SQL, and JavaScript on w3schools.com.

2. My favorite coding project I've ever worked on was an ideal gas simulator that my friend and I created in C++ for a class last semester. I designed all the elements that went into the final project on paper and implemented about 75% of the total design. The project was a challenge because even though the components that needed to be designed were straightforward in their operation, finding an efficient solution for many general problems was a difficult and bug ridden task. For instance, the function which implemented collisions between particles would make them stick together when positions of the particles would update so that they were overlapping. To correct this, we designed another function which only allowed balls to collide once per group of frames that they were in contact. Other tasks we had to accomplish included properly spawning the particles, containing the particles in a box properly, and coming up with a way to show the energy distribution of the particles. The project turned out very well, and allowed us to show what entropy is in an intuitive way.

3. One thing that separates me from other computer scientists is my background in computer engineering. In my computer science courses, I've been repeatedly taught to abstract a computer as a machine which can accomplish certain tasks using code available in programming languages. While I don't want to discredit the usefulness of abstraction in any way, my knowledge of computer design has helped me develop an intuitive understanding of several problems in CS that are more difficult to understand without basic knowledge of how a computer operates. For instance, my knowledge on the abilities limitations of the different types of computer memory was helpful when I learned about processes like memory paging and stack overflow, or when I learned about creating a program that deals with compute bound and I/O bound process that also runs as quickly as possible. Even though abstraction is a powerful tool which allows people to specialize in areas of computer science that rely upon more information than one could ever learn, I think a working knowledge of how computers work is a powerful tool for a computer scientist.

4.
    a. Information Systems Science I
    b. Data Structures
    c. Microcomputer Architecture and Interfacing
    d. Electromagnetics
    e. Electric Machinery

5. I play rugby for the School of Mines Men's Rugby Club during the spring and the fall

# Lewis J. Setter

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## EDUCATION

**Colorado School of Mines – Golden, CO**

- B.S. Electrical Engineering
- Minor: Computer Science
- 3.9 GPA, Presidential Scholar
- Proficient with C++, Verilog, Python, SOLIDWORKS
- B.S Spring 2019
- Rugby Club

## WORK EXPERIENCE

**Setter Roche LLP**

- Patent Research
- Experience with RF systems, LTE, NFV, SDN

## REFERENCES

- Steve Roche - steve@setterroche.com
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