

# JUSTIN COCKRELL

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## EXPERIENCE

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### McConnell Air Force Base – Roboticist

Summer 2021 | KS

Debugged the Python/C++ ROS packages for a self driving ATV that hadn't worked in a year and got it working again  
Rewrote the ROS canopen networking node with Linux can sockets in C++  
Created an optimized navigation system from scratch that would allow the robot to move via 2d coordinates

### Java Minecraft Modding – Instructor

2017 - 2018 | KS

Taught Java programming through Minecraft modding to students aged 12-17  
Added over 100 new blocks and items as well as new mobs with custom AI behavior

## EDUCATION

### Derby High School

Class of 2019

100 Days of Javascript Course on Udemy  
C Programming Course on Udemy

## SOFTWARE SKILLS

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**Proficient in:** C++, JavaScript

**Worked in:** HTML5, CSS, Python, C#, Java, Unity, Node JS, Express, ROS, React

**Interests:** Game dev, Android dev, Web dev, Robotics

## PROJECTS/HACKATHONS

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### Unity Game – Game Jam

Summer 2019 | KS

Created a 2d climbing platformer game in a 48 hour game jam using unity in a team of 4 people  
Developed game features using C# including the ability for the player to swim and climb  
Created C# structures to help manage player states and transfer data between classes

### Multiplayer NodeJS Tank Game

2021 | KS

Built full stack browser game using NodeJs web sockets for multiplayer capabilities  
Utilized asynchronous event handling to allow any number of players to join  
Wrote Javascript code using trigonometry to calculate the tanks movement based on its angle

### Chess Training Application

2020 | KS

Programmed a C++ application that quizzes you on openings to help memorize them  
Created a dynamic chess trainer data structure that groups openings based on opponent

### Augmented Reality

2016-2018 | KS

Created a C++ augmented reality chess program that used a webcam to identify a chess board  
Wrote an algorithm in C++ to detect edges and correctly draw the pieces aligned to the board  
Made a system to keep track of the vertices in order to orient the board properly from any angle

### 2D game engine

2020 | KS

Developed a 2d Game Engine as a C++ library that could be used to rapidly make games  
Developed classes to handle physics such as gravity and collisions for rectangles and circles

## LEADERSHIP/OTHER

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### Other

Placed 7<sup>th</sup> in the 2019 Kansas Scholastic State Blitz Chess Championship and 13<sup>th</sup> in Classical  
Ranked 36<sup>th</sup> overall in the state for chess and 3x champion of the Wichita Chess Club  
Rock climb sport routes up to 5.11 at the Kansas Cliff Club