

# Julius “JT” Klenke

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## Education

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### **Cornell University, College of Engineering, Ithaca, NY**

Bachelor of Science in Computer Science – 2022-26

GPA 4.00

#### *Related Courses*

Object-Oriented Programming & Data Structures (Java), Functional Programming (OCaml), Discrete Structures, Algorithms, Physics: Oscillations, Waves and Quantum Physics

### **Reno High School, Reno, NV**

Graduated with Honors – 2022

#### *AP Scores*

Total of 12 AP exams with 10 scores of 5, including: Computer Science A, Computer Science Principles, Calculus BC, Physics C: Mechanics, Physics C: Electricity and Magnetism

## Computer Science Experience

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### **UAV Club, Cornell – 2022-Present**

Wrote, optimized A\* and RTT algorithms in Java and C. Preprocessed data for computer vision model training.

### **Stellarator Research Assistant, Cornell – 2022-Present**

Wrote algorithms to optimize shape for magnetic confinement coils of stellarator nuclear fusion reactor using gradient descent and Gauss-Newton.

### **Mechanical Engineering Internship, University of Nevada, Reno – 2021**

Collaborated with graduate students to apply machine learning to tribology under the guidance of Professor Pradeep Menezes. Processed wear-track depth data to determine surface roughness and wear volume.

### **Evolutionary Algorithm Design, Tactical Air Support, Inc. – 2020-21**

Coded evolutionary algorithm in Python to optimize UHF communications antenna design for the broadband frequency range 108-400 MHz. The final design is to be used on F-5 Navy training jets.

Wrote independent research paper: Evolutionary Algorithm Designed Broadband Plate Antenna for F-5 Vertical Stabilizer.

### **Compose Timelapse Video into a Single Image – 2021**

Created images from timelapse videos using multiprocessing, FFmpeg and PIL.

### **Parameterization of a Path – 2020**

Created a visual representation of a Fourier transform using a DFT in the complex plane.

Application: Allows parameterization for any curve in 2d space, useful to compute path integrals for non-conservative functions.

### **Games Creation – 2015-20**

Unity (C#): 2D and 3D games

Python: side scrolling obstacle dodging game

C++: block pushing puzzle game

## Work Experience

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### **Freelance Employee, LamTex Composites, Inc. – 2018-22**

Designed and built LamTex Composites, Inc. website. Packaged and labeled product for delivery to military customers. Delivered product bi-weekly.

### **Antenna Design and Testing, Tactical Air Support, Inc. – 2020-21**

Performed VSWR sweeps with RigExpert equipment, evolutionary algorithm design.

### **Food Delivery Driver, DoorDash, Inc. – 2021-22**

Delivered food to customers as a freelance driver.

## Service and Volunteer Activities

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### **Food Bank Volunteer, Food Bank of Northern Nevada – 2020-21**

Packaged and distributed canned and fresh food for Sierra Nevada's needy population.

### **Air Sailing Clean-up, Air Sailing Gliderport – 2018-20**

Cleaned and maintained hanger and runway for local glider port facility.

### **Highschool Computer Science Tutor, Reno High School – 2019**

Tutored weekly for Computer Science.