PRESTON ALDEN

Mechanical Engineer

✉ prestonalden456@gmail.com

📞 (435) 901-4563

🌐 Logan, UT

EDUCATION

UTAH STATE UNIVERSITY

B.S.
Mechanical Engineering Major
Computer Science Minor

FE Certified

📅 2019 - 2024

📍 Logan, UT

Interests

- Puzzle Designing/Collecting
- Studying Polyhedra/Geometry
- Mechanical Toy Design
- General Mathematics
- 3D Modeling
- 3D Printing

DESIGN PORTFOLIO

prestonalden.github.io

ENGINEERING ACHIEVEMENTS

World Record 49x49x49 Twisty puzzle

- **Current world record holder** for the highest-order twisty puzzle ever created (49x49x49 Rubik's Cube) with over 13,827 pieces.
- Solely designed, engineered, and assembled the **49x49x49** twisty puzzle, requiring ~3000 hours of CAD modeling, 3D printing, and part processing.
- Completed the project independently, without external collaboration, funding, or compensation.
- Created a Youtube announcement video that gathered over 250,000 Views.
- The record was recognised and accepted by *Guinness World Records*.

WORK EXPERIENCE

Animal Research Lab Engineer

📅 December 2021 - Present   📍 USU Odum Lab, Logan, UT

- Designed a novel apparatus to **train rats to vape** for psychology research purposes
- Sole engineer for the project
- Practiced iterative design work though CAD and practical feedback
- Worked with resin printers to fabricate the apparatuses
- Designed a custom electronic photo detector, light, and solenoid
- Soldering and circuit design

My work on this project was considered highly innovative in the scientific community and other psychology labs are now using my nose port design in their own independent studies.

Delta-V Energetics

📅 August 2024 - May 2025   📍 Utah State University, Logan, UT

- Senior Capstone Project
- Designed an **explosive drop release mechanism for a drone** for avalanche prevention purposes
- Worked in a group of five other senior engineers
- Developed Integrated remote control and telemetry systems

SKILLS

3D Printing

- Accumulated **over 12,000 hours of print time**
- FDM (Traditional Filament Extrusion Printing)
- SLA (Resin Printing)

Puzzle Designer

- World record holder for the 49x49x49 Twisty Puzzle
- Designed or reverse engineered over 30 unique twisty puzzles and mechanical puzzles

Coding Languages

- Python
- Java
- C++
- C# (Made an entire video game in C#)
- Unix

Software Proficiencies

- Solidworks (CAD)
- Fusion 360 (CAD)
- Blender (CAD)
- Maya (CAD)
- Prusa Slicer (FDM 3D Printing)
- Chitubox (SLA 3D Printing)
- Unreal Engine (Game Engine)
- DaVinci Resolve (Video Editing)
- Git (Coding)
- Numerous Different Compiling Softwares (Coding)