

# JOSEPH G. PIÑON

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## EDUCATION

**Carnegie Mellon University** | Mechanical Engineering, BS, Pittsburgh, PA

**August 2019-Present**

## SKILLS

- Ansys Suite, Solidworks, Python, C#, C++, HTML, CSS, JavaScript, Unity, Blender, Photoshop
- Computational Design, Thermodynamics, Fluid Dynamics, Heat Transfer, Thermal Fluids, Statics, Stress Analysis, Dynamics Systems and Controls, Engineering Design

## PROJECTS

- **Numerical Simulation Of High Speed Rail In Tunnel Systems** | Designed a numerical model to describe the flow around high speed rail in tunnel systems; discovered that adding sawtooth pressure outlet chambers can reduce pressure transients by nearly 12%.
- **"Angle of Attack": A dynamic flight simulator and exploration game** | Designed from scratch using Blender and Python. Won 1st place among 400 students in Fundamentals of Programming (15-112) course. Video Demonstration: [https://www.youtube.com/watch?v=bgEc\\_JE1PFs&t=54s](https://www.youtube.com/watch?v=bgEc_JE1PFs&t=54s).
- **120mm CPU Fan** | Designed and built a computer 120mm CPU fan capable of providing adequate cooling to a AMD FX 6300 while under load. The Fan performed within 5 degrees of the Corsair SP120 which was the industry standard at the time.

## WORK EXPERIENCE

**Air Force ROTC** | Detachment 730 | Pittsburgh, PA

**August 2019 – Present**

- Detachment Vice Wing Commander; Assists Cadet Wing Commander and Air staff in coordination of cadet activities – ensures cadets are adequately prepared for commission into the USAF and USSF.

**Research Assistant** | Harvard University/CMU | Pittsburgh, PA

**September 2022 – Present**

- Designing a computational conjugate heat transfer model for the vitrification of mosquito larvae using Ansys Transient Thermal.
- Model can accurately determine temperature gradients in larvae and offer a recommended minimum cryoprotective agent concentration to increase survivability of larvae.

**Software Engineer** | Toyz Electronics | Pittsburgh, PA

**September 2022 – December 2022**

- Directed optimization of game asset and texture files for educational video game "Dah-Varsity"
- Texture memory usage reduced by over 50% – framerate increased for a smoother user experience.

**College Technical Specialist** | Lockheed Martin | Sunnyvale, CA

**May 2022 – September 2022**

- Repaired motor controllers for modal/jitter analysis of the Next-Generation Overhead Persistent InfraRed (NGG OPIR) satellite – saved team nearly \$100,000 in expenses.
- Designed and performed a high potential test on cable harness - met USSF expectations.

**Thermal Modeling and Simulation Intern** | RDH

**December 2021 – May 2022**

- Prepared the geometry, meshing, and boundary conditions for the thermal analysis of building enclosures using Solidworks; Model prediction was accurate within acceptable margins.

## AWARDS/CERTIFICATIONS

**Top Secret Clearance** | Department of Defense

**October 2021 – October 2026**

**Outstanding Achievement Award** | The Society of American Engineers

**May 2021**