

# Aviel Resnick

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## EDUCATION

**University of Pennsylvania**, School of Engineering and Applied Science  
Master of Science in Engineering in Computer Science; GPA: 3.73/4.0

**Philadelphia, PA**  
Jan. 2023 – May 2024

**University of Pennsylvania**, School of Engineering and Applied Science  
Bachelor of Science in Engineering in Computer Science; GPA: 3.75/4.0

**Philadelphia, PA**  
Sept. 2020 – May 2024

## EXPERIENCE

### Zenith Aerospace

**Belmont, CA**

*Software Engineering Intern*

May 2023 – Aug. 2023

- Developed a scalable full-stack (MEVN) interface for bidirectional communication with specialized high-altitude payloads.
- Embedded code across all system levels to bridge onboard firmware with ground control for aircraft-to-interface connection.
- Enhanced monitoring and debugging capabilities with real-time JavaScript visualizations, saving hours of manual calculations.
- Collaborated within a cross-functional agile team to optimize user experience for ease-of-use and performance.

### NASA Langley Research Center

**Hampton, VA**

*Software Research Intern*

June 2022 – Aug. 2022

- Developed a Haskell testing framework with 20x improved runtime and memory usage compared to existing tools.
- Engineered a novel black-box technique for combinatorial testing tools, reducing practical testing time by over 99.9%.
- Implemented a fault-seeded test suite over an air traffic collision avoidance system for comprehensive testing.
- Co-authored a paper and presented the framework (Radix Coverage) at ACM ICFP 2023.

### Penn General Robotics, Automation, Sensing, & Perception Lab

**Philadelphia, PA**

*AI Software Engineer*

July 2021 – May. 2022

- Implemented a measure for robot locomotion robustness using generative adversarial networks (GANs) in Python.
- Experimented with different network architectures in TensorFlow to optimize multi-task model performance.
- Managed the administration and maintenance of a Linux server for remote training and testing of the GAN.

### Children's Hospital of Philadelphia

**Philadelphia, PA**

*Software Engineering Intern*

June 2019 – Sept. 2020

- Developed Python medical image processing software that cut manual image segmentation time by 80% with 97% accuracy.
- Authored a paper showcasing the efficacy of the software in accurately segmenting Verhoeff-stained arterial images.

### Penn Aerospace Club High Altitude Balloon Team

**Philadelphia, PA**

*Software Director*

Sept. 2020 – Dec. 2023

- Designed a real-time SATCOM interface for high-altitude payloads, enabling connectivity with sensors at 70,000+ feet.
- Led a 12-person sub-team in flight data processing, statistical analysis, and FAA-compliant payload launch and recovery.

## PUBLICATIONS

***Don't Go Down the Rabbit Hole: Reprioritizing Enumeration for Property-Based Testing.*** Segev Elazar Mittelman, Aviel Resnick, Ivan Perez, Alwyn Goodloe, and Leonidas Lampropoulos. 2023. <https://doi.org/10.1145/3609026.3609730>

***Novel Software for Automated Morphometric Analysis of Stented Arteries.*** Aviel Resnick, Bahman Hooshdaran, Benjamin B. Pressly, David T. Guerrero, Ivan S. Alferiev, Michael Chorny, Robert J. Levy, Ilia Fishbein. 2020. <https://doi.org/10.1101/2020.01.30.927459>

## SKILLS

**Programming Languages:** Python 3, C / C++, TypeScript, JavaScript, HTML, CSS, Java, Haskell, OCaml, Bash

**Frameworks:** Vue 3, React, Tailwind, NodeJS, Express, TensorFlow, NumPy, Scikit-Learn, PyTorch, OpenCV

**Tools & Platforms:** Figma, Git, MongoDB, SQL, Docker, Selenium, GNU/Linux, Photoshop CS6