Aviel Resnick

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EDUCATION

University of Pennsylvania, School of Engineering and Applied Science — **Philadelphia, PA**
Master of Science in Engineering in Computer Science — *Jan. 2023 – May 2024*

University of Pennsylvania, School of Engineering and Applied Science — **Philadelphia, PA**
Bachelor of Science in Engineering in Computer Science, GPA: 3.7/4.0 — *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.
- Enhanced monitoring and debugging capabilities with real-time JavaScript visualizations saving hours of manual calculations.
- Collaborated within a cross-functional team to optimize the 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 compared to industry standards.
- 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.

Penn General Robotics, Automation, Sensing, & Perception Lab — **Philadelphia, PA**
AI Research Engineer — *July 2021 – May 2022*

- Implemented a measure for robot locomotion robustness using generative adversarial networks (GANs) in Python.
- Experimented with different network architectures and loss functions in TensorFlow to optimize multi-task 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 – Present*

- Designed a real-time SATCOM interface for high-altitude payloads, enabling connectivity with sensors at 70,000+ feet.
- Led 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. In Proceedings of the 16th ACM SIGPLAN International Haskell Symposium (Haskell '23), September 8–9, 2023, Seattle, WA, USA. ACM, New York, NY, USA, 13 pages. 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. https://doi.org/10.1101/2020.01.30.927459

SKILLS

Programming Languages: Python 3, C / C++, TypeScript, JavaScript, HTML, CSS, Java, Haskell, OCaml, Bash, SQL
Frameworks: Vue 3, React, NodeJS, Express, Bootstrap, TensorFlow, NumPy, SciPy, Scikit-Learn, PyTorch, OpenCV, Matplotlib
Tools & Platforms: Git, MongoDB, GNU/Linux, Figma, Photoshop CS6