Aviel (Avi) Resnick

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Education

- **University of Pennsylvania, School of Engineering and Applied Science** — Philadelphia, PA
  Bachelor of Science in Engineering, Computer Science — *Sept. 2020 – May 2024*
- **Lower Moreland High School** — Huntingdon Valley, PA
  Rigorous STEM Oriented AP Courseload, National Merit Finalist — *Sept. 2016 – June 2020*

Work Experience

- **Kod*Lab at GRASP Lab | Artificial Intelligence Researcher** — Philadelphia, PA
  Adversarial Ground Project — *July 2021 – Present*
  - Designed a measure for robot locomotion robustness using generative adversarial networks (GANs).
  - Experimented with different network architectures and loss functions to optimize performance.
  - Managed a Linux server for remote training and testing of the GAN.
  - Primarily utilized Python, Tensorflow, SciKit-Learn, Numpy, and Git.
- **Children's Hospital of Philadelphia | Software Developer** — Philadelphia, PA
  Cardiology Research — *Summer 2019 – Sept. 2020*
  - Designed and implemented medical image segmentation software.
  - Automated the morphometry of histologically stained, stent-implanted arterial images.
  - Researched the application of unsupervised learning to the segmentation of medical images.
  - Primarily utilized Python, PyTorch, OpenCV, and Tkinter.

Independent Experience

- **Penn Aerospace Club | High Altitude Balloon Team | Software Developer** *Sept. 2020 - Present*
  - Collaborated to design and maintain a real-time communication interface with a high-altitude payload.
  - Facilitated full connectivity with an onboard sensor suite at altitudes of over 70,000 feet.
  - Primarily utilized HTML, CSS, Node JS, RockBLOCK, Arduino, and Git.
- **Independent Research Project: Reconstruction of Phylogenetic Trees** *2019*
  - Evaluated the effectiveness of using the Levenshtein distance between RNA sequences of species in reconstructing their evolutionary tree.
  - Implemented Myer's edit distance algorithm to construct a distance matrix, and Prim's algorithm to build a minimum spanning tree which was rooted with an outgroup.
  - Awarded "Most Outstanding Senior High Project in the area of Computer Science" in Pennsylvania.
- **Independent Research Project: Machine Learning for Medical Diagnosis** *2018*
  - Applied machine learning classification algorithms to diagnose malignant breast tumors based on numerical data extracted from fine needle aspiration.
  - Primarily utilized Python, SciKit-Learn, and MatPlotLib.

Skills

- **Python**: Developed numerous projects, research studies, simulations, and scripts in Python 3.
- **Java**: Extensive experience with Java for both application development and scientific computation.
- **Artificial Intelligence**: Studied and applied domains of artificial intelligence including reinforcement learning, supervised and unsupervised learning, and neural networks.
- **Selected Coursework**: CIS 521 - Graduate Artificial Intelligence, CIS 160 - Mathematical Foundations of Computer Science, CIS 121 - Data Structures and Algorithms, CIS 240 - Introduction to Computer Systems, MATH 240 - Linear Algebra
- **Web Development**: Introductory knowledge of HTML5, CSS3, JS, and multiple web-oriented frameworks.
- **Languages**: Fluent in English & Russian; Proficient in Hebrew & Spanish.