

Adiel Felsen

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EDUCATION

Carnegie Mellon University | School of Computer Science

Master of Science, Machine Learning

Pittsburgh, PA

Expected in Dec 2023

Binghamton University, SUNY | Watson College of Engineering and Applied Science

Bachelor of Science, Computer Science

Binghamton, NY

Bachelor of Arts, Mathematics

May 2022

GPA: 3.98/4.00 | Dean's List all semesters

University Scholars Program | President's Scholarship | Award for Academic Excellence in Computer Science | Award for Excellence in Mathematical Sciences | Mathematics Departmental Honors | CS Student Advisory Committee

WORK EXPERIENCE

NASA Goddard Space Flight Center

Machine Learning for Atmospheric Chemistry Intern

Greenbelt, MD

Jun 2022 – Aug 2022

- Researched machine learning techniques to detect concentrations of the hydroxyl radical in the atmosphere
- Analyzed accuracy and efficiency differences between gradient boosted decision trees (GBDT) and neural networks
- Leveraged data from the Goddard Earth Observing System (GEOS) model and in-situ aircraft measurements

Mars Inc.

Data Science Intern

Chicago, IL

May 2021 – Aug 2021

- Trained a PyTorch CNN to classify M&M printing defects, saving hours of manual quality control checks
- Implemented a KMeans color clustering system to detect M&M's in an image
- Introduced a new capability of generating synthetic image data using Blender
- Built a website for factory workers to upload images and analyze proportions of defects
- Presented methodology and results to associates across the business during Data Chat and Open Mic sessions

RESEARCH EXPERIENCE

The Research Foundation for SUNY

Biomedical Machine Learning Researcher

Binghamton, NY

May 2020 – Present

- Segmented cell nuclei from stimulated Raman scattering (SRS) images of cancer cells using PyTorch
- Experimented with semantic and instance segmentation using UNet and Mask R-CNN architectures
- Decomposed hyperspectral image data into core biological components using auto encoder networks
- Collaborated with Computer Science and Biomedical Engineering departments and led status meetings
- Presented progress and results at Binghamton University Data Salon, KGML2021, IEEE BigData 2021

Binghamton University FRI Research Program

Student Researcher

Binghamton, NY

Aug 2018 – Dec 2019

- Collaborated with 6 other student researchers in a program focused on cutting-edge computer vision research
- Researched use of CNNs in Tensorflow to determine a subject's fatigue level using gaze and facial features

PUBLICATIONS

Felsen, A., Yuan Y., Burzynski, N., Reitano, D., Wang, Z., Sethi, K., Lu, F., Chiu, K. Cell Nuclei and Lipid Droplet Quantification in SRS Images. Poster-paper accepted at: IEEE International Conference on Big Data; December 2021; Orlando, FL.

Burzynski, N., Yuan Y., **Felsen, A.**, Reitano, D., Wang, Z., Sethi, K., Lu, F., Chiu, K. Deep Learning Techniques for Unmixing of Hyperspectral SRS Images. Poster accepted at: IEEE International Conference on Big Data; December 2021; Orlando, FL.

Burzynski, N., **Felsen, A.**, Yuan, Y., Reitano, D., Wang, Z., Lu, F., Chiu, K. Applications of Machine Learning in SRS Cancer Cell Analysis. Poster presented at: Knowledge Guided Machine Learning Workshop (KGML2021); August 2021; Minneapolis, MN.

PROJECTS AND AWARDS

HackBU Annual Hackathon

Funniest Hack (2022) | #1 Best Hack Overall (2021) | Best Machine Learning Hack (2021) | Best Building a Better Future Hack (2021) | Best Civic Engagement Hack (2021) | Featured Project (2020) | Best Valentine's Day Hack (2019)

Binghamton, NY

Association for Computing Machinery (ACM) Programming Competition - First Place Winner (2019)

Binghamton, NY

SKILLS

Programming Languages: Python (PyTorch, TensorFlow, Keras, NumPy, Pandas, OpenCV), C, C++, Java, R, SQL

Software and OS: Git, Linux, Bash, Blender, Microsoft Excel