Adiel Felsen

937 Prince Street, Teaneck, NJ 07666 | afelsen85@gmail.com | 551-486-9363
adielfelsen.com | linkedin.com/in/adiel-felsen | github.com/afelsen

EDUCATION

Binghamton University, State University of New York, Watson College of Engineering *Expected in May 2022*
Bachelor of Science, Computer Science
Bachelor of Arts, Mathematics
GPA: 3.97/4.00 | Dean's List Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021
University Scholars: Member of selective four-year honors program for students of exceptional merit
President's Scholarship: Presented to students of high academic achievement

RESEARCH EXPERIENCE

The Research Foundation for SUNY | Binghamton, NY *May 2020 – Present*
Biomedical Machine Learning Researcher
- Built neural networks using PyTorch to segment cell nuclei from images of cancer cells
- 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 | Binghamton, NY *Aug 2018 – Dec 2019*
Student Researcher
- Collaborated with 6 other student researchers in a 3-semester FRI program focused on critical thinking and cutting-edge computer vision research
- Researched use of support vector machines and convolutional neural networks in TensorFlow to find patterns in various gaze features and to determine a subject's fatigue level

WORK AND LEADERSHIP EXPERIENCE

Mars Inc. | Chicago, IL *May 2021 – Aug 2021*
Data Science Intern
- Trained a PyTorch CNN to classify M&M printing defects, saving hours of manual quality control checks
- Implemented a KMeans color grouping algorithm to detect M&Ms in an image
- Introduced a new capability of generating synthetic image data using Blender
- Created a website for factory workers to upload images and analyze proportions of defects
- Presented methodology and results to dozens of associates across the business during Mars' monthly Data Chat and Open Mic sessions

Binghamton University | Binghamton, NY *Aug 2019 – May 2020*
Teaching Assistant
- Mentored first-year research teams and provided support for coursework and projects
- Facilitated discussion and learning in research methods class and technical lab sessions
- Tutored and advised students during weekly office hours

TouchTunes an Octave Group Company | New York, NY *Apr 2018 – May 2018*
Product Management Intern
- Consolidated and evaluated reviews for the TouchTunes mobile app using Excel
- Analyzed song play data and developed algorithms to support artist promotions

PUBLICATIONS

Felsen, A., Yuan Y., Burzynski, N., Reitano, D., Wang, Z., Sethi, K., Lu, F., Chiu, K. Cell Nuclei and Lipid Droplet Quantification in Stimulated Raman Scattering 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 Stimulated Raman Images. Poster-paper 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.

Reviewer for 2021 IEEE International Conference on Big Data (IEEE BigData 2021)

PROJECTS, AWARDS, AND ACTIVITIES

Binghamton University Annual Hackathon | Binghamton, NY *Feb 2019 – Present*

HackBU 2021

#1 Best Hack Overall | Best Machine Learning Hack by The Raymond Corporation | Best Building a Better Future Hack by AIS | Best Civic Engagement Hack by J.P. Morgan Chase

Created a Zoom overlay using a convolutional neural network to classify facial expressions

HackBU 2020

Featured Project

Trained a custom deep learning chatbot designed to match users with a presidential candidate

HackBU 2019

Best Valentine's Day Hack

Designed a dating website concept built with Python and Flask

Computer Science Student Advisory Committee | Binghamton, NY *Sep 2021 – Present*

Committee Member

Prepare reports on the teaching effectiveness and student-teacher relations of computer science faculty members under consideration for promotion or tenure

Math Club Undergraduate Speaker Series | Binghamton, NY *Oct 2021*

Student Speaker

Delivered talk to members of the Math and Data Science & Analytics clubs regarding the mathematical theory behind an artificial neural network

Art of Science Competition | Binghamton, NY *Apr 2021*

Featured Submission

Generated an artistic representation of a convolutional neural network's activations, selected for exhibition in conjunction with Binghamton Research Days

Association for Computing Machinery (ACM) Programming Competition | Binghamton, NY *Apr 2019*

First Place Winner

Competed against several dozen undergraduate and graduate students while collaborating with a teammate to solve ACM coding problems

TECHNICAL SKILLS

Languages: Proficient in Python (PyTorch, TensorFlow, Keras, NumPy, Pandas, OpenCV), C, C++, Java, R, SQL
Basic in Haskell, Prolog, x86 Assembly, MIPS Assembly

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