Logan Frank

http://loganfrank.github.io

Email: frank.580@osu.edu
Phone: (XXX) XXX - XXXX

Education

The Ohio State University — Columbus, OH
Ph.D. in Computer Science and Engineering — August 2019 - Present

Wright State University — Dayton, OH
B.S. in Computer Engineering — August 2015 - May 2019
Overall GPA: 3.88/4.00, Major GPA: 3.91/4.00

Experience

Ohio State University, Computer Vision Laboratory — Columbus, OH
Graduate Research Associate — August 2019 - Present
Current:

- Investigating alternative perspectives and novel approaches to achieving overall improved generalization of neural networks by harnessing the statistical distributions of different modalities of input data
- Researched into developing novel defense strategies for improving the robustness of neural networks against white-box adversarial attacks by leveraging different data transformations / augmentations

Previous:

- Collaborated with the Department of Food, Agricultural, and Biological Engineering at Ohio State to apply a confidence-grounded hierarchical inference approach to plant stress identification (work published to WACV 2021)

The Ohio State University, Computer Science and Engineering Department — Columbus, OH
Graduate Teaching Associate — August 2019 - Present

- Taught CSE2221: Software Components 1 to a class of 40 students
- Overall rating of 4.80 / 5.00 (0.54 above department average)
- "One of the best teachers I have had in my life, not just in college. Knew the content in and out, and taught with a true passion" -Anonymous Student, Spring 2020

Air Force Research Laboratory — Dayton, OH
Graduate Research Intern — Summer 2019

- Researched into utilizing knowledge graphs in neural networks for more explainable, generalizable, and robust models
- Using the ADE20K dataset, developed a neural network architecture where an object recognition model outputs object probabilities and feeds them as inputs into a linear logistic regression model for more interpretable scene classification
- Aligned ADE20K with the WordNet ontology to circumvent the noisy, ambiguous, and rare object labels in the dataset
- Calibrated the trained object recognition model for a more trustworthy and even more interpretable neural network
- Experimented with utilizing the provided segmentation maps to create a localization guided object recognition model

Publications

L. Frank, C. Wiegman, J. Davis, S. Shearer
"Confidence-Driven Hierarchical Classification of Cultivated Plant Stresses"
IEEE/CVF Winter Conference on Applications of Computer Vision (2021)

Z. Daniels, **L. Frank**, C. Menart, M. Raymer, P. Hitzler
"A Framework for Explainable Deep Neural Models Using External Knowledge Graphs"
SPIE Defense and Commercial Sensing: AI and ML for Multi-Domain Operations Applications Track (2020)

Technical Skills

Programming Languages: Python, Julia, Java, Bash, JavaScript, MATLAB, C#, C/C++
Libraries: PyTorch, Pandas, NumPy, Matplotlib, Plotly, Scikit-Learn, D3.js, OpenCV, Keras, Flask
Tools: Git, Singularity containers, Slurm job scheduler, PBS job scheduler, LaTeX, AWS EC2

Honors, Awards, and Activies

SMART Scholarship Recipient, United States Department of Defense — 2019
Dean's List, Wright State University College of Engineering and Computer Science — 7 Semesters
NCAA Division 1 Athlete - Swimming, Wright State University Athletics — August 2015 - May 2017