

Tyler LaBonte

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Education

GEORGIA INSTITUTE OF TECHNOLOGY 2021–Present
Ph.D., Machine Learning GPA: 4.0/4.0
Advisors: Jacob Abernethy and Vidya Muthukumar

UNIVERSITY OF SOUTHERN CALIFORNIA 2017–2021
B.S., Applied and Computational Mathematics, *magna cum laude* GPA: 3.73/4.0

Skills: Python, TensorFlow, Keras, PyTorch, Numpy, Scikit-Learn, C++, Linux CLI, Git, Vim, \LaTeX

Selected Publications

- Scaling Novel Object Detection with Weakly Supervised Detection Transformers
Tyler LaBonte, Yale Song, Xin Wang, Vibhav Vineet, and Neel Joshi
WACV 2023
- Dropout Disagreement: A Recipe for Group Robustness with Fewer Annotations
Tyler LaBonte, Vidya Muthukumar, and Abhishek Kumar
NeurIPS 2022 Workshop on Distribution Shifts

Industry Research Experience

MICROSOFT RESEARCH Redmond, WA
Machine Learning Research Intern 2021–2022

- Developed Transformer model for weakly supervised object detection with multiple instance learning.
- Achieved object detection performance within 2% of fully-annotated benchmarks using only class labels.
- Created Bing-based workflow to automate training dataset creation, accelerating model development by 4 \times .
- Integrated pipeline into production system, enabling rapid delivery of new Windows Action Center capability.

GOOGLE X Mountain View, CA
Machine Learning Research Intern 2020

- Invented CNN-LSTM for temporal identity preservation in multiple object tracking for computational agriculture.
- Developed self-supervised method to extract novel time-series features from agricultural video imagery.
- Presented results to Google executives, who approved an FTE hire to deploy my research to production systems.

SANDIA NATIONAL LABORATORIES Albuquerque, NM
Machine Learning Research Intern 2019–2020

- Invented novel Bayesian CNN deep learning architecture which scales to billion-voxel 3D segmentation volumes.
- Enabled error bound calculation for physical properties of graphite electrodes and thermal protection systems.

Selected Awards

DoD National Defense Science and Engineering Graduate Fellowship (\$170,000) 2021

NSF Graduate Research Fellowship (\$138,000—declined) 2021

USC Discovery Scholar (Research distinction for <100 USC graduates) 2021

USC Trustee Scholar (Full scholarship worth \$250,000) 2017