

Tyler LaBonte

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Education

GEORGIA INSTITUTE OF TECHNOLOGY	2021–Present
Ph.D., Machine Learning	
UNIVERSITY OF SOUTHERN CALIFORNIA	2017–2021
B.S., Applied and Computational Mathematics, <i>magna cum laude</i>	GPA: 3.73/4.0
Skills: Python, TensorFlow, Keras, PyTorch, Numpy, Scikit-Learn, C++, Linux CLI, Git, Vim, \LaTeX	

Selected Publications

1. **Tyler LaBonte**. Finding the Needle in a High-Dimensional Haystack: Oracle Methods for Convex Optimization. Senior Thesis, 2021. Winner of the USC Discovery Scholar distinction.
2. Michael C. Krygier, **Tyler LaBonte**, Carianne Martinez, Chance Norris, Krish Sharma, Lincoln N. Collins, Partha P. Mukherjee, and Scott A. Roberts. Quantifying the Unknown: Impact of Segmentation Uncertainty on Image-Based Simulations. *Nature Communications*, 2021.

Research Experience

MICROSOFT RESEARCH	Redmond, WA
<i>Machine Learning Research Intern</i>	2021
<ul style="list-style-type: none">– Developed Vision Transformer 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
<i>Machine Learning Research Intern</i>	2020
<ul style="list-style-type: none">– 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.– Initiated a time-lapse experiment in raspberry breeding, building an object evolution dataset with 20,000 images.– Presented results to Google executives, who approved an FTE hire to deploy my research to production systems.	
SANDIA NATIONAL LABORATORIES	Albuquerque, NM
<i>Machine Learning Research Intern</i>	2019–2020
<ul style="list-style-type: none">– 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.– Integrated codebase with Sandia supercomputers; now an integral component of \$10 million simulation system.	

Selected Awards

DoD National Defense Science and Engineering Graduate Fellowship (\$170,000)	2021
NSF Graduate Research Fellowship (\$138,000, one of 5 undergrads in ML, declined)	2021
USC Discovery Scholar (Research distinction for <100 USC graduates)	2021
USC Trustee Scholar (Full scholarship worth \$250,000)	2017
USC Viterbi Fellow (Research funding worth \$24,000)	2017