Tyler LaBonte

tlabonte@gatech.edu
https://tyler-labonte.com
https://github.com/tmlabonte
https://linkedin.com/in/tmlabonte
https://twitter.com/tmlabonte

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

1. **Tyler LaBonte**, Yale Song, Xin Wang, Vibhav Vineet, and Neel Joshi. Scaling Novel Object Detection with Weakly Supervised Detection Transformers. In *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. Workshop on Attention and Transformers in Vision.

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*, 12(5414), 2021.

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×.
  – 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
USC Viterbi Fellow (Research funding worth $24,000)	2017