

Tyler LaBonte

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Education

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| GEORGIA INSTITUTE OF TECHNOLOGY | 2021–Present |
| Ph.D., Machine Learning | GPA: 4.0/4.0 |
| 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*, 12(5414), 2021.

Research Experience

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| MICROSOFT RESEARCH | Redmond, WA |
| <i>Machine Learning Research Intern</i> | 2021 |
| <ul style="list-style-type: none">– 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 |
| <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.– 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. | |

Selected Awards

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| DoD National Defense Science and Engineering Graduate Fellowship (\$170,000) | 2021 |
| – One of two students to receive both DoD NDSEG and NSF GRFP in Computer Science | |
| 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 |