

Keanu Nichols

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EDUCATION

Boston University

PhD in CS

Research Advisor: Bryan Plummer

Boston, MA

September 2023 – Present

Boston University

MS in AI

Research Advisor: Bryan Plummer

Degree GPA: 3.95/4.0

Boston, MA

September 2021 – December 2023

The University of the West Indies

Bachelor of Science in Computer Science Special

Degree GPA: 4.03/4.3

Trinidad

Aug. 2017 – May 2021

PUBLICATIONS

1. **Nichols K.**, Hosein P., Estimating Deforestation using Machine Learning Algorithms, The International Conference on Intelligent Data Science Technologies and Applications (*IDSTA2021, IEEE Estonia Section*)
2. Hosein P., Rahaman I., **Nichols K.**, Maharaj K., Recommendations for Long-Term Profit Optimization, 1st Workshop on the Impact of Recommender Systems - Denmark (*ACM RecSys 2019 - Best Paper*)

EXPERIENCE

Graduate Student Researcher

Boston University

Jan 2022 – Present

Boston, MA

- Comparing phrase grounding techniques that support multiple languages
 - Compared translation based phrase grounding models with monolingual based grounding models
 - Determining the impact that large transformer based models vs fasttext based embedded models have on phrase grounding datasets like Flickr30K Entities
- **DARPA SemaFor** (UC Berkeley/BU Team) project: focusing on problems related to manipulated media for image categorization and manipulated region detection
 - Implementing the Microsoft GLIP model for determining the label assigned to a given region in an image given a set of known labels
 - Currently ranked at the top for 4/6 inhouse competitions for the SemaFor project
 - Determining the impact of combining the GLIP model predictions with a vision transformer model (UPerNet) trained on manipulated media to determine if the misinformation is harmful

Machine Learning Undergraduate Researcher

TTLAB

April 2018 – August 2021

Trinidad

- Researched and proposed the use of drones to detect weeds and determine plant health, providing concrete evidence of past success using these methods (in other countries) for a **National Geographic/Microsoft/NVIDIA** research grant **AI For Earth** (awarded \$70,800 USD)
 - Investigated Segmentation models (DeepLabV3, U-Net, Segnet) on a toy dataset for weed detection with U-Net getting the highest IOU-Score of 83%
- Developed a recommender system using Multinomial Naive Bayes that showcased a profit/probabilistic trade-off for its recommendations
 - Utilized the MovieLens dataset to showcase how companies that promoted recommendations not suited to a customer lost money in the long term because customers were less likely to use those recommendations

Deep Learning Research Intern

NASA Ames Research Center

June - August 2019

Mountain View, CA

- Developed an image segmentation model to classify Landsat images as having either clouds or not using a Fully Convolutional Networks based model using Tensorflow/Keras Dataset API

Software Engineer

Community Health Analytics Open Source Software

May - August 2018

Remote

- Conducted sentiment analysis using NLTK to determine differing levels of toxic emails