

Tian Yun

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EDUCATION

Brown University		Providence, RI
<i>Master of Science in Computer Science.</i>	<i>GPA:4.00/4.00</i>	<i>August 2020 - Expected May 2022</i>
Wake Forest University		Winston-Salem, NC
<i>Bachelor of Science in Mathematical Statistics</i>	<i>GPA:3.92/4.00</i>	<i>August 2016 - May 2020</i>
<i>Honors Bachelor of Science in Computer Science</i>	<i>GPA:3.96/4.00</i>	
▪ Honors: Summa Cum Laude, Dean's list all semesters, Member of Phi Beta Kappa Honor Society		

RESEARCH EXPERIENCE

LUNAR Lab, Brown University	Providence, RI
<i>Co-advised by Ellie Pavlick and Chen Sun</i>	<i>August 2020 – Present</i>
▪ Investigated whether vision-and-language (VL) pretraining yields better linguistic representations. <ul style="list-style-type: none">♦ Evaluated learned representations from VL and text-only pretraining by probing and clustering experiments.♦ Concluded that VL pretraining in its current form does not have benefits for NLP in general.	
▪ Researched whether pretrained vision-and-language (VL) models learn composable primitive concepts. <ul style="list-style-type: none">♦ Created a two-step approach to measure the usefulness and interpretability of learned primitive concepts from Contrastive Language-Image Pretraining (CLIP).♦ Found that the learned primitives from CLIP are useful for visual recognition task but not interpretable.	
Humans to Robots Lab, Brown University	Providence, RI
<i>Advised by Stefanie Tellex</i>	<i>March 2021 – Present</i>
▪ Proposing a situation-aware coaching dialogue system that guides users to accomplish daily tasks by reasoning over uncertainties in the environment and asking clarification questions to the users.	
BigScience Workshop, HuggingFace	Providence, RI
<i>Advised by Ellie Pavlick</i>	<i>May 2021 – Present</i>
▪ Co-leading the engineering team in Evaluation working group to build a zero-shot evaluation pipeline.	
▪ Constructing a suite of tests to evaluate how well language models understand word relations and word meanings on low-level concepts (e.g. colors, spatial directions).	
DataMine Research Group, Wake Forest University	Winston-Salem, NC
<i>Advised by Natalia Khuri</i>	<i>August 2019 – August 2020</i>
▪ Built a pipeline with machine learning algorithms to extract information about safety and efficacy of drugs in pediatric populations from approved drug product labels.	

PUBLICATIONS

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- [1] *Do Vision-Language Pretrained Models Learn Primitive Concepts?*
Tian Yun, Usha Bhalla, Ellie Pavlick, Chen Sun.
Under Review.
- [2] *Does Vision-and-Language Pretraining Improve Lexical Grounding?*
Tian Yun, Chen Sun, Ellie Pavlick.
Findings of EMNLP, 2021.
- [3] *Mining Biomedical Texts for Pediatric Information.*
Tian Yun, Deepti Garg, Natalia Khuri.
14th International Joint Conference on Biomedical Engineering Systems and Technologies, 2021.

THESIS

An Introduction to Topic Modeling and Sentiment Analysis

Winston-Salem, NC

Advised by Natalia Khuri

April 2020 – August 2020

- Implemented LDA with Gibbs sampling process to label documents with latent topics in R.
- Conducted sentiment analysis on literature works and Twitter comments using bag-of-words, n-grams, etc.

Segmentation and Classification of Satellite Maps with Deep Learning

Winston-Salem, NC

Advised by Nicole Dalzell

September 2019 – May 2020

- Constructed a U-Net architecture to extract roads from Dstl satellite maps (Jaccard index of 0.12).
- Expanded and augmented limited number of satellite maps by cropping, sampling, and flipping.

PROFESSIONAL EXPERIENCE

Tencent Holdings Limited

Shenzhen, China

Data Analyst Intern

May – August 2019

- Extracted and processed billions of rows of data to monitor QQ Kandian and Kandian APP using Hive-SQL.
- Used Flask and Git Webhook to develop a back-end service to automate script uploading and task scheduling.
- Evaluated and predicted the customer attrition in the following week (AUC score of 0.9173).

China Minsheng Bank

Beijing, China

Data Analyst Intern

May – July 2018

- Aggregated and evaluated data for 8 million customers and obtained 500 thousand records of customers using SQL on DBM2.
- Fitted statistical models to predict the target customers (i.e. 48,000 targets from 8 million) who may have over 50,000 RMB savings next month.

TEACHING ASSISTANTSHIPS

CSCI-1470/2470: Deep Learning, Brown University

September 2021 – Present

Teaching Assistant

Instructor: Chen Sun

CSCI-1460: Computational Linguistics, Brown University

January 2021 – April 2021

Teaching Assistant

Instructor: Eugene Charniak

Computer Science Peer Tutor, Wake Forest University

September 2017 – May 2020

AWARDS

ICPC Mid-Atlantic USA Regional Contest 2019, UNC – Chapel Hill

Chapel Hill, NC

4th Place

November 2019

- Designed and implemented algorithms in Python to solve problems.

ASA DataFest 2019, Duke University

Durham, NC

Honorable Mention

April 2019

- Proposed Fatigue Composite Index to quantify the individual variation in self-reported data from athletes in Canadian National Women's Rugby Team.

COMAP's Mathematical Contest in Modeling 2019

Winston-Salem, NC

Honorable Mention

January 2019

- Designed Environmental Degradation Index to measure environmental degradation costs from human activities.

SERVICE

Conference Reviewer

- Computer Vision and Pattern Recognition (CVPR)

2022