

Peter Zhang

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Education

Montgomery Blair High School Silver Spring, MD

Class of 2020

Science, Mathematics and Computer Science Magnet Program

- Coursework: Analysis of Algorithms, Artificial Intelligence, Algorithms and Data Structures, Computer Graphics, Multivariable Calculus, Differential Equations, Statistics, Linear Algebra, Organic Chemistry, Magnet Biology
- Scores: 3.94 GPA, 4.76 wGPA, 36 ACT

Skills

Languages

- Java, Python, HTML/CSS, Javascript/ReactJS, PHP/SQL, R, MATLAB, \LaTeX , Bash

Applications

- MS Office, MiniTab, Autodesk Inventor/Blender, GitHub, IDLE/Eclipse/IntelliJ

Research Experience

Root and Rule-Based Natural Language Processing

Jun 2019–Jul 2019

National Institute of Standards and Technology; Dr. TN Bhat

- Automated the download of scientific articles and preprocessing of sentences
- Designed a rule-based algorithm to construct subject-predicate-object triplets
- Used triplets to improve topic modeling and document clustering
- Incorporated into NIST's MGI Data Repository.

Neural Cryptanalysis for Classical Ciphers

Apr 2019–Jun 2019

University of Maryland CS Department; Prof. William Gasarch

- Compiled an original English corpus of several million words
- Trained ANNs to crack ciphers with more speed and accuracy than traditional methods

Systems Modeling of Earth's Carrying Capacity

Mar 2019–Apr 2019

Independent Research

- Collected data on 35 environmental and development indicators over two decades
- Used Spearman's correlation and regression analyses to model relations between variables
- Computed theoretical limits on Earth's carrying capacity with Nelder-Mead optimization

Professional Experience

Webmaster and Research Assistant

Dec 2018–Present

Premier Debate Institute, Los Angeles; Bob Overing, Director

- Design and maintain webpages at premierdebate.com
- Publish and promote research briefings used by thousands of students

Awards

American Regions Mathematics League; Division A, 8th Place	2019
International Mathematics Modeling Challenge; Finalist	2019
Ronald Reagan Great Communicators Debate; Mid-Atlantic Champion	2019
Blue Ocean Entrepreneurship Competition; Semi-Finalist	2019
High School Mathematics Modeling Challenge; Finalist	2019
Hack Pennsylvania; First Place	2019
USA Computing Olympiad; Gold Division	2019
American Computer Science League; All-Star Qualifier	2018
Carnegie Mellon Informatics and Mathematics Competition; Honorable Mention	2018

Activities

Debate Team President, Varsity Member	Sep 2016–Present
<ul style="list-style-type: none">– Plan and lead weekly practices and lectures– Coordinate monthly trips to tournaments nationwide– Led team to win the Maryland state championship	
Developer's Club Co-Founder, Captain	Sep 2018–Present
<ul style="list-style-type: none">– Write and present lectures on machine learning topics– Organizing a regional programming competition	
DECA (Business) Chapter Co-Founder, VP	Sep 2018–Present
<ul style="list-style-type: none">– Teach curriculum focused on business concepts and skills– Qualified all fourteen club members to the international competition	
Chamber Choir Treasurer, Section Leader	Sep 2017–Present
<ul style="list-style-type: none">– Manage finances, assist fundraisers, and organize trips– Lead practices and assist new members	

Projects

Eye Coach Mobile app with augmented reality to help people with autism train eye contact	Jan 2019
Coaster Ranker Neural network for predicting roller coaster ratings from height, speed, etc.	Nov 2018
Speech4Me Website to perform sentiment/complexity analysis of text and suggest edits	Oct 2018