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 w/ Jupyter, HTML/CSS, Javascript/ReactJS, PHP/SQL, R w/ Shiny, MATLAB, LaTeX

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

Research Experience

Statistics Interface of Transcriptional Pharmacodynamics   Jul 2019–Present
National Cancer Institute; Dr. Yingdong Zhao
- Scraped the NCI transcriptional pharmacodynamics database of over 1 billion datapoints
- Designed a dynamic R Shiny interface for conducting statistical analyses

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 Entreprenuership Competition; Semi-Finaist	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
- 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
- Write and present lectures on machine learning topics
- Organizing a regional programming competition

DECA (Business) Chapter Co-Founder, VP — Sep 2018–Present
- 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
- Manage finances, assist fundraisers, and organize trips
- Lead pracitces 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