

# Peter Zhang

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## Education

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**Montgomery Blair High School** Silver Spring, MD

Class of 2020

*Science, Mathematics and Computer Science Magnet Program*

- Coursework: Complex Analysis, Differential Equations, Linear Algebra, Statistics, Computational Methods, Computer Graphics, Software Development, Analysis of Algorithms, Artificial Intelligence
- Scores: 3.95 GPA, 4.77 wGPA, 36 ACT

## Skills

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### Languages

- Java, Python w/ Jupyter, HTML/CSS, Javascript/ReactJS, PHP/SQL, R w/ Shiny,  $\text{\LaTeX}$

### Applications

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

## Research Experience

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### Interface for Transcriptional Pharmacodynamics

Jul 2019–Mar 2020

*National Cancer Institute; Dr. Yingdong Zhao*

- Scraped and reformatted the NCI database of 1 billion+ datapoints
- Designed R Shiny interface for interactive plotting and statistical analyses

### Root and Rule-Based Natural Language Processing

Jun 2019–Sept 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
- Improved topic modeling and document clustering with root-and-rule terms

### Neural Cryptanalysis for Classical Ciphers

Apr 2019–Jul 2019

*University of Maryland CS Department; Prof. William Gasarch*

- Trained neural networks to decipher text with improvements in speed and accuracy
- Generalized results across alphabetical languages and cipher types

## Professional Experience

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### 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

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USA Computing Olympiad; Platinum Division	2020
Ronald Reagan Great Communicators Debate; National Quarterfinalist	2019
American Regions Mathematics League; Division A, 8th Place	2019
International Mathematics Modeling Challenge; Finalist	2019
Blue Ocean Entrepreneurs Competition; Semi-Finalist	2019
High School Mathematics Modeling Challenge; Finalist	2019
Hack Pennsylvania; First Place	2019

## Activities

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

## Projects

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<b>Judge Pool</b> Software deploying end-to-end encryption to securely de-identify and transfer data	Nov 2019
<b>Eye Coach</b> Mobile app with augmented reality to help people with autism train eye contact	Jan 2019
<b>Coaster Ranker</b> Neural network for predicting roller coaster ratings from height, speed, etc.	Nov 2018
<b>Speech4Me</b> Website to perform sentiment/complexity analysis of text and suggest edits	Oct 2018