Tim Shifan Dong

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Education

Washington University in St. Louis, MO **Aug 2019 – Present**
- **Bachelor's/Master's** in **Computer Science** ● **GPA: 3.99** / 4.0
- **Second Major** in **Mathematics** ● **Credits Earned: 146** / 150
- **Notable Courses**
  - **Computer Science:** (Graduate) *Machine Learning, (Graduate) Theoretical Artificial Intelligence, Nonlinear Optimization, Bayesian Optimization, Quantum Computing, Algorithm Analysis, Frontend / Backend, Objective Oriented, Computer Systems,*
  - **Mathematics:** (*Graduate*) *Algebra, (Graduate) Complex Analysis, Topology, Measure Theory, Lie Groups, Statistics & Probability*

Skills and Proficiency

Natural Languages: Native speaker of *Chinese*; proficient in *English*
Programming Languages: proficient in *C++*, *Python*, *Java*, *JavaScript*, *html*, *R*, *Matlab*, *LaTeX*, *Assembly*
Libraries / Frameworks: proficient *NumPy*, *PyTorch, Qiskit*, *Mosek*, *Sedumi*

Employment

Software Engineer Intern, Google, Mountain View **May 2022 – Aug 2022**
- Worked on a team under AdsAI that adopted user journey models for better advertisement suggestions
- Designed new fields and conducted protocol buffer changes for annotating user tasks and journey
- Implemented pipeline to annotate notes on a Hierarchical Agglomerative Cluttering graph
- Evaluated the pipeline and analyzed the effectiveness of the implemented change

Engineering Teaching Assistant & Engineering Tutor **Jan 2020 – Present**

Personal Project

Leading Developer & Founding Member, Wall Street Connect (www.wallstreetconnect.org) **Feb 2021 – Present**
- Proposed a service that helps job applicants network via email automation
- Constructed a LinkedIn scraper using python Selenium that collected over 100,000 public profiles
- Integrated dynamic Javascript UI from Wix with backend Apache server from AWS EC2

Full-stack Developer & Founding Member, Indream Online Recruitment Platform **Jun 2020 – Nov 2020**
- Designed and implemented an interview-based application with a recommendation system that matches recruiters and student users with maximal suitability, and connects student users with similarity
- Maintained NoSQL databases, Javascript APIs, and html frontend UI under the WeChat Miniapp framework
- The project continued as Peer with 10,000 active users and $200,000 in angel round funding by September 2021

Developer, Jiangsu WebAce Innovation Center (www.webace-i3c.com) **Jul 2019 – Aug 2019**
- Gathered data and trained a naïve Bayes classifier and a random forest to classify verbal queries about movie information that are managed in a neo4j knowledge graph database
- Developed higher level voice detection and query processing APIs on NAO robots using python and Baidu cloud service
- Synthesized a system for detecting and answering voice inquiries for further real-world usage

Research Experience

Machine Learning Research at Washington University **Jun 2020 – Present**
- Developed a machine learning algorithm for shape segmentation using polynomial invariants learning
- Proved the correctness of the algorithm within the sum-of-square framework under the supervision of Dr. Brendan Juba

Freiwald Scholarships Program at Washington University, Mathematics Department **Feb 2021 – Aug 2021**
- Utilized abstract algebra and representation theory to research the algebraic invariant theory of polynomial coefficients
- Simplified and improved the online learning framework in the aforementioned shape segmentation problem

Clubs and Extracurriculars

Executive & Competitive Programming Coach, WUSTL Association of Computing Machinery **Sep 2019 – Present**
- Qualified top 3 for WUSTL ICPC team, finished top 12 (2019) and top 7 (2020) in Mid-Central Programming Contest
- Held weekly competitive programming training seminars and managed repository for more than 10 students
- Organized recruiting events and Coding Jams for students on campus

Athlete, WUSTL Table Tennis Club **Sep 2019 – Present**
- Trained twice a week on competitive table tennis skills and techniques
- Participated in the Divisional Competition held by National Collegiate Table Tennis Association

Honors and Awards

Valedictorian & Summa Cum Laude, Washington University, Class of 2022 **2022**
Dean's List, McKelvey School of Engineering (WUSTL) **2020, 2021, 2022**
Lifetime Member, Tau Beta Pi Engineering Honor Society **2021**
Top 6 (out of 80), Mid-Central USA Regional Programming Contest **2022**
Top 150 (out of 3000), William Lowell Putnam Mathematical Competition **2021**