

# Stone Tao - Resume

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## Highlights

- 2x MIT Battlecode Finalist (best placing: 5th overall, 1st overall out of solo competitors), finished 66th in Halite 3 out of 4000+ professionals and students.
- Developed a generalized Artificial Intelligence competition framework that handles infrastructure for competitions and bots in any programming language, allowing the user to run a fully scalable AI competition with any design they want and with no hassle.
- Independently developed & designed a commercial website for the tech company TAOS Data, with traffic up to 18k+ daily users.

## Skills

- **Programming Languages:** (Advanced) Javascript, Typescript; (Proficient) Java, Python; (Basic) PHP, C, C++
- **Frameworks/Engines/Libraries:** (Advanced) Node.js, node-ffi, jQuery; (Proficient) React, MERN, GraphQL, WordPress, Matplotlib, Seaborn, Pandas, Numpy; (Basic) Keras+TensorFlow, MongoDB, MySQL, LAMP
- **Software:** Adobe Photoshop, IntelliJ, Jupyter Notebook, Git

## Work Experience

### Software Engineer at ProtoLab / Design Lab at UCSD - Oct. 2019 to Now | San Diego, USA

- Developing Design for San Diego platform with Typescript, Firebase, React, Redux, Webpack under Dr. Steven Dow
- Developing our own React component library as an extension of ant-design

### Computer Science Tutor at UCSD - Mar. 2020 to Now | San Diego, USA

- Working under Dr. Paul Cao to tutor CSE 12: Intro to Basic Data Structures and OO Design
- Interview students weekly, grade programming assignments, help students during lab hours, write some assignment test cases

### Full Stack Developer Intern at TAOS Data – Jun. 2019 to Sep. 2019 | Beijing, China

- Independent developed a Node.js connector for the company's product, TDengine, an open source big data platform with over 10,000+ stars on GitHub. Created a C interface, promise based, multi-level API, and used buffers for high speed, effortless interaction with TDengine. Implemented subscription, sync and async, and stream functionality.
- Independently developed and designed the company website <https://www.taosdata.com>. Integrated Wordpress as a headless CMS

## Selected Projects

### Dimensions - Generalized AI Competition Framework (37 stars) – Apr. 2020 (Repository Link: [github.com/stonet2000/dimensions](https://github.com/stonet2000/dimensions))

- Developed a generalized AI competition framework in Typescript. The framework handles the infrastructure, enabling users unlimited freedom in the design of any kind of AI competition in any language. The framework allows for language agnostic bots to compete in any design. Furthermore, the framework may support and help facilitate research into general AI.
- Current plans include integrating Google Cloud and Mongo DB to help scale up the framework

### IgushArray Java/JS – Sep. 2019 (Repository Link: [github.com/StoneT2000/IgushArray-Java](https://github.com/StoneT2000/IgushArray-Java))

- Developed the first Java and JS implementation of the IgushArray, which has the same time complexities on operations as the ArrayList, including  $O(1)$  access time, but with improved insert and removal times of  $O(\sqrt{n})$ .

### Polytomizator – Jun. 2018 (Link: [stonet2000.github.io/Polytomizator](https://stonet2000.github.io/Polytomizator), Repository Link: [github.com/StoneT2000/Polytomizator/](https://github.com/StoneT2000/Polytomizator/))

- Developed a web app that allows users to create low-poly art in seconds compared to the hours it takes with Photoshop. Used image filtering, computer vision techniques, and Poisson disk sampling help auto-generate better low-poly art.

## Awards

- **MIT Battlecode (AI Competition):** Finalist, 9th overall in 2019, 5th overall and 1st overall out of solo competitors in 2020, competing against over 600 teams consisting of high school, undergrads, and graduate students
- **IEEE at UCSD Quarterly Projects++ 1st Place:** Collaborated on an IoT themed based farm that auto-irrigates and collects time-series data to present improved user feedback on plant growth, built over one quarter at UCSD - Sep. 2019 to Nov. 2019
- **Halite 3 (AI Competition):** Placed 66th out of 4000+ students and professionals globally. Placed above Two Sigma's base bot. 5th placed high school student out of 500+ HS students. 1st place JavaScript bot - Jan. 2019
- **USA Mathematical Talent Search 2018:** Silver Medal – May 2018

## Education

### Undergraduate: University of California San Diego, San Diego, California, Expected graduation date: Jun. 2023

- Current Major: Computer Science and Engineering. Intend to double major with Cognitive Science with Specialization in Machine Learning and Neural Computation ; Major GPA: 4.0/4.0
- Past Courses: Honors Linear Algebra, Honors Multivar. Calculus, Discrete Math, Neurobiology of Cognition
- Selected current courses: Honors Vector Calculus, Advanced Data Structs., Research Methods (Cog Sci)
- Activities: ACM at UCSD - Develop software to run the club such as website and membership portal, help run campus events

## **Other**

- **Sports:** Competitive fencer. Currently an assistant coach at the La Jolla Fencing Academy. Founded the fencing club at my high school, International School of Beijing.
- **Languages:** Fluent English and Chinese
- **Interests:** Web Development, Artificial Intelligence, Physics, Mathematics (Primarily combinatorics)

## **References**

Available upon request