

Ethan Shen

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EDUCATION

Stanford University

B.S., Computer Science (anticipated)

Stanford, CA

2020

Machine Learning, Probability and Statistics, Natural Language Processing, Programming Abstractions, Computer Organization and Systems, Data Structures, Algorithms, Discrete Math for Computer Science, Linear Algebra and Multivariable Calculus, Genomic Analysis

EXPERIENCE

Machine Learning Engineer, OccamzRazor

Python

Palo Alto, CA

10/2017 – Present

- Working with team on an AI-driven neuroscience product that uses reinforcement learning to extract information from publications and various other data sources for universal analysis via bioinformatics frameworks
- Individual project involves researching methods for guiding game-playing ml agents using information derived from knowledge graphs

Software Engineer, Yoshi Inc.

Ruby on Rails, SQL

San Francisco, CA

5/2017 – 10/2017

- Integral part of iOS application and backend overhaul effort at a YCombinator-backed startup
- Responsible for upgrading Yoshi's custom CRM web application with a wide range of new features to optimize operator workflow
- Developed a comprehensive integration testing suite and restructured Yoshi's internal RESTful API and database design

Stem Cell Researcher, Stanford Medical School

Helms, Longaker Labs

Stanford, CA

7/2014 – 10/2017

- Leveraged technical background to optimize and improve data analysis methods
 - Designed and executed projects investigating stem cells in tissue regeneration that led to publications
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PROJECTS

Machine Learning (Python)

Classifying stem cell age using gene expression data

Stanford, CA

9/2017 - Present

- Trained classifier models on stem cell RNA sequencing dataset to predict whether it is young or aged based on gene expression patterns
- Retroactively discovered critical gene clusters correlated to stem cell aging using lasso and forward feature selection algorithms

3D Image Analysis (Python)

Building a workflow for 3D fluorescent image analysis

Stanford, CA

1/2017 - 2/2017

- Given a surface rendering of objects, built script to quantify relationships (distance, density, number of branches, etc.)
- Tool increased experimental precision and reproducibility, and was quickly adopted by the lab (publication in review)

Computer Organization and Systems (C)

Dynamic memory allocator

Stanford, CA

1/2017 - 2/2017

- Built and optimized a dynamic heap memory allocator in C with utilization and throughput comparable to standard library memory allocators
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ACTIVITIES

Asia-Pacific Student Entrepreneurship Society (ASES)

Stanford, CA

- Iterated through design thinking process to develop *Corbul* with industry mentors, a location-based contact-sharing application

App Development Club (ADC)

Stanford, CA

- Hosted series of workshops in basic iOS and Web Application development
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AWARDS AND PUBLICATIONS

Awards and Recognitions:

Siemens Competition for Science, Math, and Technology Finalist (2016) – top 40 science, math, and technology projects in the US

Intel Science Talent Search National Semifinalist (2016) – top students globally in prestigious science competition for high school seniors

Conrad Spirit of Innovation Challenge National Semifinalist (2013) – national innovation and entrepreneurial team competition for global solutions

Research Articles:

- R. C. Ransom, D. J. Hunter, S. Hyman, G. Singh, S. C. Ransom, **E. Z. Shen**, K. C. Perez, M. Gillette, J. Li, B. Liu, J. B. Brunski, and J. A. Helms. "Axin2-expressing Cells Execute Regeneration after Skeletal Injury." *Sci. Rep.* (2016): 36524; doi:10.1038/srep36524
 - B. Salmon, B. Liu, **E. Z. Shen**, T. Chen, J. Li, M. Gillette, R. Ransom, M. Ezran, C. Johnson, A. Castillo, W. J. Shen, F. Kraemer, A. Smith and J. A. Helms. "WNT-activated bone grafts repair osteonecrotic lesions in aged animals." *Sci. Rep.* (2017): 14254; doi:10.1038/s41598-017-14395-9.
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SCORES & SKILLS

- HS GPA: 4.45, ACT: 35, AP: 5 in Biology, Calculus BC, Chinese, Computer Science, Chemistry, English Literature
- Proficient in: HTML/CSS, SQL, Swift, Python, Ruby on Rails, Java, JavaScript, Typescript, C++, C.
- Skills: Integration/Unit Testing, Web application development, Database design, Building RESTful APIs, Machine Learning (scikit-Learn, Tensorflow)