Ethan Shen

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EDUCATION

Stanford University **Stanford, CA**

B.S., Computer Science (anticipated) *2020*

Machine Learning, Probability and Statistics, Natural Language Processing, Programming Abstractions, Computer Organization and Systems, Mathematical Foundations of Computing, Linear Algebra and Multivariable Calculus, Organic Chemistry, Genomic Analysis, Biochemistry

EXPERIENCE

Machine Learning Engineer, OccamzRazor **Palo Alto, CA**

Python *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. **San Francisco, CA**

Ruby on Rails, SQL *5/2017 – 10/2017*

- Integral part of 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 **Stanford, CA**

Helms, Longaker Labs *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

PROJECTS

Machine Learning (Python) **Stanford, CA**

Classifying stem cell age using gene expression data *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) **Stanford, CA**

Building a workflow for 3D fluorescent image analysis *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) **Stanford, CA**

Dynamic memory allocator *1/2017 - 2/2017*

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

ACTIVITIES

Asia-Pacific Student Entrepreneurship Society (ASES) **Stanford, CA**

Bootcamp Team Leader *9/2016 – Present*

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

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:

1. 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
2. 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.

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, Python, Ruby on Rails, Java, JavaScript, Typescript, C++, C. Bilingual in Mandarin Chinese.
- Skills: Integration/Unit Testing, Web application development, Database design, Building RESTful APIs