Ethan Shen

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EDUCATION

Stanford University   **Stanford, CA**
B.S., Computer Science   *2019*
Machine Learning, Deep Learning, Natural Language Processing, Convolutional Neural Networks, Computer Vision, Computational Genomics
Programming Abstractions (*Java, C++*) Computer Organization and Systems (*C*), Data Structures (*Java*), Algorithms (*C++, Python*)
Matrix Theory, Discrete Math for Computer Science, Linear Algebra and Multivariable Calculus, Probability Theory

DEV SKILLS

- Proficient in: HTML/CSS, SQL, Swift, Python, Ruby on Rails, Java, JavaScript, Typescript, C++, C.
- Skills: Object-oriented programming, Integration/Unit Testing, Web application development, Database design, Building RESTful APIs, Machine Learning (scikit-Learn, Tensorflow), iOS application development

EXPERIENCE

Machine Learning Engineer, OccamzRazor   **Palo Alto, CA**
Python   *10/2017 – Present*
- Working with team on an AI-driven neuroscience product for Parkinson's research that uses reinforcement learning and Snorkel NLP to extract unstructured information from publications, genomic databases, and various other data sources for universal bioinformatics analysis
- Individual project involves researching methods for guiding game-playing RL agents using embedded knowledge graphs

Stem Cell Researcher, Stanford Medical School   **Stanford, CA**
Longaker, Weissman Lab   *7/2014 – Present*
- Designed and presented projects investigating stem/progenitor cells in aging tissue regeneration after injury that led to publications
- Contributed as head of technical team by optimizing lab workflow and building out ML applications for cellular analyses

Software Engineer, Yoshi Inc.   **San Francisco, CA**
Ruby on Rails, SQL   *5/2017 – 10/2017*
- Integral part of iOS application and backend overhaul effort at a Series A startup backed by Y-Combinator and GM Ventures
- 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 (raised coverage 3x) and restructured Yoshi's internal RESTful API and database design

PROJECTS

Machine Learning (Python)   **Stanford, CA**
Using single-cell gene expression to predict aging   *9/2017 - Present*
- Trained classifier models on stem cell RNA seq data to predict with 98.5% accuracy age of cells based on gene expression patterns
- Retroactively discovered critical gene clusters correlated to stem cell aging using self-developed feature selection algorithms

3D Image Analysis (Python)   **Stanford, CA**
Building a workflow for 3D fluorescent image analysis   *1/2017 - 2/2017*
- Given a 3D surface rendering of objects from laser-scanning fluorescent microscopy, built script to quantify relationships (distance, density, number of branches, etc.). Tool increased experimental precision and reproducibility, was quickly adopted by the lab (publication in review)

Computer Organization and Systems   **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

Stanford App Development Club (ADC)   **Stanford, CA**
- Hosted workshops in basic iOS and Web Application development for underclassmen, also worked with low-income/first-gen students

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. **E. Z. Shen,** C. P. Blackshear, R. C. Ransom, N. N. Chung, J. S. Flacco, D. Irizarry, S. M. Vistnes, E. A. Brett, M. T. Longaker, and D. C. Wan. "Comparative Three-Dimensional Analysis of Human and Mouse Adipose Tissue." J. Mol. Endocrinol. (in review)