

Jesse Zhang

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|--------------------|---|------------------------|
| EDUCATION | Stanford University , Stanford, CA Ph.D., Electrical Engineering (anticipated 2019) Research interests: Machine Learning, Statistics, Genomics Advisor: David Tse | <i>09/2014-Present</i> |
| | Stanford University , Stanford, CA M.S., Electrical Engineering | <i>09/2014-06/2016</i> |
| | Tufts University , Medford, MA B.S., Electrical Engineering | <i>09/2010-05/2014</i> |
| | Newton South High School , Newton, MA | <i>09/2006-06/2010</i> |
| WORK EXPERIENCE | Grail , Menlo Park, CA <i>Computational Biology Contractor</i> | <i>12/2017-08/2018</i> |
| | <i>Computational Biology Intern</i> | <i>08/2017-12/2017</i> |
| | <ul style="list-style-type: none">• Building classifiers and other machine learning tools using Python and R for analysis of cancer genomics data | |
| | Cellular Research , Menlo Park, CA <i>Bioinformatics Intern</i> | <i>06/2016-09/2016</i> |
| | <ul style="list-style-type: none">• Worked on ResolveTM system as part of an interdisciplinary team of biologists, engineers, and bioinformaticians• Designed a Python library for automated analysis of high-dimensional single-cell RNA-seq data (clustering and feature selection) | |
| | MC10, Inc. , Cambridge, MA <i>R&D Intern</i> | <i>05/2014-08/2014</i> |
| | <ul style="list-style-type: none">• Implemented machine learning and signal processing MATLAB algorithms to facilitate real-time and offline accelerometer data analysis• Collaboratively optimized hardware-software interface | |
| | MIT Lincoln Laboratory , Lexington, MA <i>Electrical Engineering Co-op</i> for Group 33 | <i>09/2013-05/2014</i> |
| | <i>Electrical Engineering Intern</i> for Group 33 | <i>06/2013-08/2013</i> |
| | <ul style="list-style-type: none">• Developed MATLAB algorithms to intelligently extract trace from ionogram images• Created graphical user interface in MATLAB to facilitate ionogram image processing | |

Tufts Biomedical Engineering Department, Medford, MA

Researcher under supervision of David Kaplan, Ph.D.

09/2011-08/2012

- Designed and constructed gold circuits on silk scaffolds using soldering, gold sputter coating, and AutoCAD to control and detect neuronal signals
- Processed and analyzed neuronal signals using MATLAB and pCLAMP software

Dana Farber Cancer Institute, Boston, MA

Researcher under supervision of Myles Brown, M.D.

05/2011-08/2011

- Conducted experiments to define role of lysine-specific demethylase 1 in human hormone dependent and independent prostate cancer
- Performed computational analysis of results using MS Excel, python and cistrome.org

TEACHING

EE 372: Data Science for High-Throughput Sequencing, Stanford, CA

EXPERIENCE

Teaching Assistant

01/2018-03/2018

Teaching Assistant

03/2016-06/2016

- Worked with academic advisor and fellow group member to design the first course in the Stanford electrical engineering department on computational problems in genomics
- Prepared lecture notes, led recitation sections, wrote questions for problem sets, designed and updated a course website: [data-science-sequencing.github.io](https://github.com/dn-tse/data-science-sequencing)

Stanford Athletic Academic Resource Center, Stanford, CA

Tutor

03/2016-06/2016

- Tutored probabilistic systems analysis for three Stanford undergraduate athletes

Tufts Academic Resource Center, Medford, MA

Head Tutor

08/2013-05/2014

Resident Head Tutor

08/2012-05/2013

- Tutored introductory physics, introductory chemistry, calculus III, differential equations, and linear algebra
- Held large-scale review sessions, weekly office hours, 1-on-1 sessions

PAPERS

Farnia, F.*, **Zhang, J. M.***, & Tse, D. N. (2018). Generalizable Adversarial Training via Spectral Normalization. arXiv preprint arXiv:1811.07457. (*equal contributions)

Zhang, J. M., Kamath, G. M., & Tse, D. N. (2018). Towards a post-clustering test for differential expression. *bioRxiv*, 463265.

Feizi, S., Javadi, H., **Zhang, J.**, & Tse, D. N. (2017). Porcupine Neural Networks: (Almost) All Local Optima are Global. In *Advances in Neural Information Processing Systems 32*, 2018.

Zhang, J. M., Fan, J., Fan, H. C., Rosenfeld, D., & Tse, D. N. (2018). An Interpretable Framework for Clustering Single-Cell RNA-Seq Datasets. *BMC Bioinformatics*, 19(1), 93.

Ntranos, V.*, Kamath, G. M.*, **Zhang, J. M.***, Pachter, L., & Tse, D. N. (2016). Fast and accurate single-cell RNA-Seq analysis by clustering of transcript-compatibility counts. *Genome biology*, 17(1), 1. (*equal contributors)

Cai, C., He, H. H., Gao, S., Chen, S., Yu, Z., Gao, Y., Chen, S., Chen, M.W., **Zhang, J.**, Ahmed, M., Wang, Y., Metzger, E., Schüle, R., Liu, X. S., Brown, M., & Balk, S. P. (2014). Lysine-specific demethylase 1 has dual functions as a major regulator of androgen receptor transcriptional activity. *Cell reports*, 9(5), 1618-1627.

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| INVITED TALKS | Tufts University electrical engineering seminar | 04/2018 |
| | Becton Dickinson seminar | 06/2016 |

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| HONORS AND AWARDS | National Science Foundation Graduate Fellowship Honorable mention | 03/2016 |
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| | Tufts University | |
| | Summa Cum Laude | 05/2014 |
| | The Amos Emerson Dolbear Scholarship (\$1355.25) | 04/2014 |
| | The Class of 1898 Prize (\$1983.91) | 04/2014 |
| | Tau Beta Pi | 11/2012 |
| | Eta Kappa Nu | 10/2012 |
| | Howard Sample Prize Scholarship in Physics (\$566.33) | 04/2012 |

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| | Chinese Consolidated Benevolent Association of New England CCBA Scholarship (\$2500.00) | 12/2010 |
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| | Junior Achievement of Northern New England Stephen G. Sullivan Scholarship (\$1000.00) | 06/2010 |
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| SKILLS | Languages: Python, R, MATLAB, C++, Bash Packages: Jupyter, TensorFlow, CVX, NumPy, SciPy, scikit-learn, Git, L ^A T _E X |
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