

# Jason Junjie Zhu

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## SUMMARY

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I am a curiosity-driven builder with experience in Statistics and AI methodology (TODO: fill in later) and real-world systems (multi-modal RAGs, search products, biomedical discovery), drawn to hidden patterns, scalable impact, and high-agency teams.

## EDUCATION

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- **Stanford University** Stanford, CA  
*Ph.D. in Electrical Engineering (Advisor: Chiara Sabatti), M.S. in Statistics* 2014 – 2020
- **Franklin W. Olin College of Engineering** Needham, MA  
*B.S. in Electrical and Computer Engineering* 2010 – 2014

## PROFESSIONAL EXPERIENCE

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- **Nexa AI** Cupertino, CA  
*Head of AI/ML* Feb 2025 – Present
  - **Leadership:** Leading a lean and fast-paced team to accelerate Gen-AI edge inference on any device.
  - **Local RAGs:** Developing privacy-preserving RAGs with small AI models and on-device vision capabilities.
  - **Agentic Systems:** Researching action-driven applications with new AI protocols (e.g., MCP, A2A).
- **Apple** Cupertino, CA  
*Machine Learning Engineer* Jan 2020 – Feb 2025
  - **Evaluation:** Developed both generative and retrieval-based methods to evaluate query understanding and ranking systems.
  - **Data Analysis:** Analyzed complex production data sets with high-dimensional statistics and large-scale computing.
  - **Testing Strategies:** Designed new testing strategies for software services at the intersection of user experience and computational algorithms.
- **Illumina** San Francisco Bay Area  
*Deep Learning Scientist (Internship)* Jun 2017 – Aug 2017
  - **TensorFlow:** Wrote customized deep learning software in TensorFlow and experimentation infrastructure for base-calling applications.
  - **Model Architectures:** Systematically combined CNNs, RNNs, and residual networks to significantly improve accuracy.
- **10X Genomics** Pleasanton, CA  
*Data Scientist (Internship)* Jun 2016 – Aug 2016
  - **R/Python Pipelines:** Productionized R software packages for exploratory single-cell RNA sequencing analysis and improved internal Python software pipelines.

## RESEARCH EXPERIENCE

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- **Department of Statistics, Stanford University** Stanford, CA  
*Researcher* Sep 2016 – Feb 2020
  - **Gene Ontology:** Developed graph visualizations to interpret and analyze the Gene Ontology.
  - **Single-cell RNA-seq:** Implemented exploratory data analysis pipelines for stem-cell and cancer model systems.
  - **Selective Inference:** Proposed selective inference methods to study tissue-specific expression quantitative trait loci.
- **Department of Computer Science, Stanford University** Stanford, CA  
*Researcher* Sep 2014 – Sep 2016
  - **Sequence Alignment:** Designed algorithms in C/C++ to improve speed and accuracy of state-of-the-art sequence aligners for linked-read data.

- **Wireless Communication Group, Olin College** Needham, MA  
*Researcher* *Sep 2010 – May 2014*
  - **SDMA Networks:** Proposed stochastic geometric interference models to extend SDMA network applications.
- **Graph Theory Research Group, Olin College** Needham, MA  
*Researcher* *Dec 2011 – May 2014*
  - **Graph Coloring:** Investigated frequency assignment in wireless networks through graph coloring.
  - **L(2,1)-labeling:** Found minimum span for L(2,1)-labeling in various graph families.
- **Signal Processing and Communication Laboratory, HKUST** Hong Kong  
*Researcher* *Jul 2013 – Sep 2013*
  - **OFDM Systems:** Studied unsynchronized interferers in multi-antenna OFDM systems.
  - **Linear Receivers:** Discovered closed-form solutions for typical linear receiver performance.

## SELECTED PUBLICATIONS

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- **Improving ML-based information retrieval software with user-driven functional testing and defect class analysis:** FST, 2022
- **Automatically Authoring Regression Tests for Machine-Learning-Based Systems:** ICSE, 2021
- **Progenitor identification and SARS-CoV-2 infection in human distal lung organoids:** Nature, 2020
- **Exploratory gene ontology analysis with interactive visualization:** Scientific Reports, 2019
- **Visualization and analysis of single-cell RNA-seq data by kernel-based similarity learning:** Nature Methods, 2017