

S. Yvette Chen

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Education

University of California, Berkeley, Bachelor's Degree in Computer Science 2025 - 2029

- **GPA: 4.0/4.0** | **Dean's List** [link to transcript]
- **Coursework:** *Principles and Techniques of Data Science (DATA C100)* | *Discrete Mathematics and Probability Theory (CS 70)* | *Data Structures (CS 61B)* | *Linear Algebra and Differential Equations (MATH 54)*

Experiences

Student ML Researcher | **Berkeley Artificial Intelligence Research (BAIR)** May 2026 - Present

- Collaborating within Song Lab under Prof. Yun S. Song on inference-time guidance for variable-length sequence generative flow matching model.

Student AI Researcher | **UC Berkeley & Lawrence Berkeley National Lab (LBNL)** Jan 2026 - May 2026

- Collaborating within Keenan's Group to develop uncertainty-aware multi-agent architectures for *bias labeling* in Lidar-based 3D point clouds and raster data. Reduced per-tree labeling time by 98%.
- Designed and implemented a *zero-modification generalizable* decoupling framework to translate expert rules into executable decision trees, enabling the dynamic reconfiguration of the orchestrator agent without retraining, achieving Macro-F1 of 67.7% and outperforming ML baselines.
- Work has been accepted to ICML 2026 Workshop on AI for Science as top 50% in accepted papers.

Independent ML Researcher | **Jacobs Institute for Design Innovation** Sep 2025 - May 2026

- Designing a *NeRF*-based architecture for 3D manifold reconstruction from mesh parameters, with a *GNN* module for spinal curvature classification.
- Previously selected from 200+ applicants incl. undergraduate, Master's and Ph.D. as one of the three undergraduate teams to join the Berkeley Student Entrepreneurship Program (StEP) in Fall 2025.

Computational Science Research Intern | **Southwest University** Dec 2022 - Feb 2025

- Performed data cleaning, normalization, regression modeling and population dynamics modeling to quantify the effect of EjFUL gene edits on loquat maturation timelines.
- Work was recognized as Outstanding Project of the Year (10 out of 100+ projects received this award). Findings were published and patented (2024).

Projects, Pre-Prints & Publications

Chen, S., Saban, N., Hargreaves, C., & Wang, H. (2026). **TreeAgent: a generalizable Multi-Agent framework for automated bias labeling in forestry via compiled expert rules and Vision-Language models.** *ICML 2026 Workshop on AI for Science*.

- Top 50% among accepted papers. Contributed as the first author to design and implement a zero-modification generalizable framework to transpile and execute expert rules.

YXiZ: NeRF-Assisted and Deep Learning-Driven Spatial Inference for At-Home Scoliosis Detection [poster]

Chen, S., & Yuan, Z. (2024). **Biomarkers of Specific Brain Changes in Adolescents with Anxiety Disorder Based on MRI Multimodal Data.** *Advances in Education Humanities and Social Science Research*, 12(1), 722. [link]

- Developed statistical learning pipelines using a *Linear Mixed Model in MATLAB* to perform high-dimensional, covariate-controlled analysis on a large-scale neuroimaging dataset ($n > 10,000$).
- Applied *graph theory algorithms* to model structural covariance, using graph-based metrics (degree centrality, clustering, modularity) to characterize network dysfunction; optimized computation for multi-dataset scalability.

End-to-End Large-Scale Sentiment Classifier based on Multinomial Bayes (Finalist, National Math Modeling Competition)

- Implemented a full NLP pipeline (*tokenization, lemmatization, TF-IDF vectorization*) and trained a *multinomial Naive Bayes* classifier for sentiment classification on 100k+ TikTok comments, achieving AUC 0.85–0.89.
- Proactively enhanced model robustness by curating training sets to address complex NLP challenges (*sarcasm, slang, and multilingual text*).

Honors & Awards

- The Jacobs Institute Innovation Catalysts | Jacobs Institute for Design Innovation** Feb 2026
- Awarded on the project YXiZ: Deep Learning-Driven Spatial Inference for At-Home Scoliosis Detection.
 - The YXiZ project has previously been accepted to Berkeley Student Entrepreneurship Program (StEP) and proceeded to the semi-finalist round of the Fall 2025 cohort.
- Outstanding Project of the Year | The Chuying Innovation Talent Program** Feb 2025
- Performed data cleaning, normalization, regression modeling and population dynamics modeling to quantify the effect of EjfUL gene edits on loquat maturation timelines.
 - Work was recognized as Outstanding Project of the Year (*10 out of 100+ projects receive this award*). Findings are published and patented (2025).
- Grand Slam | International Space Settlement Design Competition (ISSDC)[Link]** Apr 2023 - Jul 2024
- Led the first-and-only Chinese delegation to achieve the Grand Slam in national, Asian, and international finals.
 - Space Settlement Design Competitions (SSDCs) have been held at the famous NASA's Jet Propulsion Laboratory; NASA's John F. Kennedy Space Center; NASA's Dryden Flight Research Center; NASA's Johnson Space Center; and NASA's White Sands Test Facility.
- National Finalist | China National College Mathematics Modeling Competition** May 2024
- Certificate of Occupational Ability of Data Analysis | China Shipper's Association** May 2024

Skills

Programming: Python (primary), Java, C++ , TypeScript, Scheme

Machine Learning: scikit-learn, PyTorch, PyTorch Geometric, NLTK, OpenCV, LangGraph, HuggingFace, SpaCy

Data & Systems: Node.js, FastAPI, PostgreSQL

Scientific & Research: MATLAB, NumPy, Pandas, Matplotlib, LaTeX

Research Focus: Machine Learning, Deep Learning, Generative Modeling