

# Mike (Michael) Gee

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## Education

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### University of Southern California

BS in Computer Science, GPA : 3.5 / 4.0

Los Angeles, CA

Jan 2021 — Dec 2025

- **Dean's List:** Spring 2021, Fall 2023, Fall 2024

- **Relevant Coursework:** Machine Learning\*, Natural Language Processing, Deep Learning\*

\* Graduate-level course

## Publications

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### [1] **Conversational Time Series Foundation Models: Towards Explainable and Effective Forecasting**

Defu Cao, **Michael Gee**, Jinbo Liu, Hengxaun Wang, Wei Yang, Rui Wang, Yan Liu

Preprint. In review at ICLR 2026.

## Research Experience

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### Undergraduate Researcher

USC Melady Lab

Oct 2024 — Present

Advisor: Yan Liu

- Designed ensemble framework for probabilistic time series forecasting with sequential quadratic programming and LLM-based judge, improving forecast robustness and providing explanations for ensemble weights
- Engineered distributed pretraining and evaluation pipelines with GluonTS, PyTorch, and Hugging Face, scaling up to 1 TB of data
- Ranked 3rd place overall on the [GIFT-Eval Time Series Forecasting Leaderboard](#); resulted in 2nd author publication submitted to ICLR 2026

### Undergraduate Researcher

USC DILL Lab

Feb 2025 — Present

Advisor: Swabha Swayamdipta

- Investigating sparse autoencoders (SAEs) for identifying capabilities that benchmarks test, enabling more fine-grained evaluations
- Assessing whether SAE neurons represent atomic or composite capabilities to determine their effectiveness for fine-grained evaluation
- Discussed weekly findings with PhD students and advisors to determine future research directions

## Projects

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### Contrastive Learning For Semantic Textual Similarity (STS)

Aug 2024 — Dec 2024

- Demonstrated success of Self-Supervised Contrastive Learning for fine-tuning models for STS in low resource settings using PyTorch and SentenceTransformers
- Introduced Z-tests to prove statistical significance of performance gains and achieved 36% performance improvement over baseline

### Evaluating Model Size for Machine Translation

Aug 2024 — Dec 2024

- Evaluated improvements on machine translation with respect to model size to provide cost-benefit insights for pre-training large-scale models
- Developed PyTorch and Transformers pipeline for fine-tuning models with LoRA and found that performance gains plateaued with increasing model size

## Leadership

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### Treasurer

Society of Asian Scientists and Engineers at USC

May 2022 — May 2024

- Organized professional and social events for 300+ STEM students of Asian heritage with 10 person team
- Managed \$5,000+ annual budget and coordinated first ever trip to SASE National Conference in Atlanta, GA

## Skills

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**Programming Languages:** Python, C/C++, Java, MATLAB, HTML, CSS, JavaScript, PHP, SQL

**ML/DL Libraries:** PyTorch, GluonTS, Hugging Face, Sentence Transformers, scikit-learn

**Technologies:** Git, SLURM, W&B,  $\text{\LaTeX}$ , Linux