Gio Jung

+1 (415) 518-5283 giojung6141@gmail.com
LinkedIn GitHub

Education

Master of Science in Computer Science *2024 - 2025*
San Francisco State University
Dissertation: "Evaluation of Vision Language Models using Item Response Theory"
Advisor: Dr. Ilmi Yoon

Bachelor of Arts in Mathematics: Concentration in Mathematics for Advanced Study
San Francisco State University *2016 - 2023*
Minor in Computer Science

Research Experience

YouDescribe *Summer 2025 - Present*
Crowed-sourced Platform for volunteer-created audio descriptions of online videos

- Collaborating with interdisciplinary team to research focusing accessibility for blind and low vision (BLV) users/communities.
- Designing and experimenting using Item Response Theory (IRT) to validate AI/LLM performances on video audio description task.

NAIRR Pilot Resource *October 2024 - Present*
"Scaling AI Video Description Model Capacity for the Blind and Low Vision Community"

- Utilizing computational resources provided by the NAIRR Pilot, including NVIDIA A100 GPUs, to train large-scale AI models for video description tasks.
- Conducting experiments on high-performance computing systems to refine model scalability and performance under real-world constraints.

Evaluation of Vision Language Models Using Item Response Theory *June 2024 – Present*
Graduate Research Project, San Francisco State University

- Designed and implemented an Item Response Theory (IRT)–based evaluation framework to analyze how reliably VLMs apply human rating scales across multimodal tasks.
- Conducted three case studies—image–caption quality assessment, comic reading-comprehension inference, and video audio-description evaluation—to test model alignment with expert human judgments.
- Applied Partial Credit Models (PCM) to estimate latent rater ability, item difficulty, and threshold structure, enabling direct comparison between human raters and model predictions.
- Validated model–human agreement using Kendall's Tau correlation; GPT-4o snapshots achieved alignment scores approaching.

Work/Teaching Experience

TASC Tutor, SFSU *Spring 2023 - Present*
Tutoring and Academic Support, SFSU

– Providing one-on-one tutoring for mathematics and computer science courses, including GWAR math proofs, linear algebra, number theory, discrete math, and algorithm classes, tailoring sessions to individual student needs.

– Developing personalized study strategies and clarified challenging concepts, helping students achieve improved academic performance and confidence in technical subjects.

Software Engineering Intern *Aug 2025 - Nov 2025*
Astro Information Security

– Developed an email spam detection and a notification system using Gmail API and MCP, enabling real-time classification of incoming messages.

Teaching Assistant Grader, Number Theory *August 2023 - Spring 2025*
Department of Mathematics, SFSU

– Evaluated and provided constructive feedback on homework assignments, emphasizing clarity and mathematical rigor.

– Responded to student inquiries regarding grading, clarifying misunderstandings and reinforcing course concepts.

Teaching Assistant Grader, Linear Algebra *Spring 2024 - Spring 2025*
Department of Mathematics, SFSU

– Reviewed and graded weekly assignments, focusing on the accuracy of calculations and proofs.

– Collaborated with the instructor to develop grading rubrics for assignments.

Publication/Manuscript

– Lana Do, **Gio Jung**, Juvenal Francisco Barajas, Andrew Scott, Shasta Ihorn, Vassilis Athitsos, Alexander Mario Blum, and Ilmi Yoon. *How well can VLMs rate audio descriptions: A multi-dimensional quantitative assessment framework.* Under Revision at CHI 2026.

– Juvenal Francisco Barajas*, **Gio Jung***, Manali Seth, Lana Do, Malleeswari Jagabattuni, Andrew Scott, Shasta Ihorn, Vassilis Athitsos, and Ilmi Yoon. *Beyond Lexical Overlap: Validating Semantic Similarity Metrics for LLM-Based Video Caption Augmentation.* Under Review at ICIIT 2026.

– Alexander Mario Blum, James M. Mason, Robin C. Irey, Yukie Toyama, Yunting Liu, **Gio Jung**, Andrew Scott, JinHo Kim, David Pearson. *Using Item-Response Theory to Disentangle Local vs. Global Processing Dispositions in Autistic Cognition: Comparing Multi-Modal Comics vs. Text-Based Narratives in a Randomized Study.* Under Revision at Journal of Discourse Processes.

– Andrew Scott, **Gio Jung**, Alexander Mario Blum, Juvenal Francisco Barajas, Manali Seth, Shasta Ihorn, Vassilis Athitsos, Ilmi Yoon. *Evaluation of Vision Language Models with Item Response Theory.* Manuscript at AAAI 2026.

Honors/Awards/Grants

– NAIRR Pilot Resource *October 2024 - Present*

- *Title: "Scaling AI Video Description Model Capacity for the Blind and Low Vision Community"*

– National Science Foundation (NSF), the grant of 3K *June 2025 - August 2025*

– Google CAHSI IRP Grant Research Assistant *August 2024 - August 2025*

- *Title: "Responsible Design and Development of a Validated AI Video Description Rater"*

– Dean's List, San Francisco State University *Spring 2022 - Fall 2023*

– Jessie F. L. York Scholarship, 1K *October 2017*

Poster Presentations

– Lana Do, Shasta Ihorn, Charity Pitcher-Cooper, Juvenal Francisco Barajas, **Gio Jung**, Xuan Duy Anh Nguyen, Sanjay Mirani, Ilmi Yoon. 2025. *ADx3: A Collaborative Workflow for High-Quality Accessible Audio Description.* NeurIPS 2025. Poster Presentation, December 2025

– **Gio, Jung**, Ilmi Yoon. 2024. ***GPT-4o vs. Humans in Rating Image Descriptions***. Poster Abstract. Poster Presentation at CAHSI Research Poster Competition from GMiS Conference, November 2024

Project

eBay 2025 University Machine Learning Competition *2025*

– Ranked in the top 4 with an F1 score of 0.94 as part of the team "init to win it".

ChillMate – AI Mental Health Chatbot (GitHub) *Fall 2024*

– Built a chatbot using RAG tailored to SFSU Community; Led Scrum process as team's Scrum Master.

Deep Learning Group Project *Fall 2024*
Data Visualization Group Project *Spring 2024*

Technical Skills

– Programming languages and mathematical packages: Matlab, Python, Java, SQL, LaTeX, R.

– Focus Areas: Artificial Intelligence (AI), Machine Learning, Deep Learning, Computer Vision, Item Response Theory (IRT), Natural Language Processing (NLP), Data Analysis, Statistics.

– Other: Linux (Ubuntu), Mac OS.

Languages

Korean: Fluent
English: Proficient