Timothy Do

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Education

San Jose State University — San Jose, CA
Bachelor of Science in Software Engineering — *May 2027*
GPA: 3.83/4.00

Publications

- **ERGO: Entropy-guided Resetting for Generation Optimization in Multi-turn Language Models.**
  Khalid, H. M., Jeyaganthan, A., Do, T., Fu, Y., O'Brien, S., Sharma, V., & Zhu, K.
- **Pruning for Performance: Efficient Idiom and Metaphor Classification in Low-Resource Konkani Using mBERT.**
  Do, T., Saran, P., Poojary, H., Prabhu, P., O'Brien, S., Sharma, V., & Zhu, K.
  Accepted as Poster, 1st Workshop on Multilingual Data Quality Signals (COLM 2025).

Experience

Science Undergraduate Laboratory Intern — June 2025 - Aug. 2025
SLAC National Accelerator Laboratory — *Menlo Park, CA*

- Analyzed accelerator data and improved MeV-UED camera time resolution using S3DF resources
- Processed and visualized electron beam timing data with Python in Jupyter Notebook environments
- Evaluated ePix and Andor camera results to measure electron arrival and timing jitter precisely
- Optimized terahertz streaking and beamline conditions for advanced electron-photon synchronization studies

Artificial Intelligence Research Intern — May 2025 - July 2025
Algoverse — *Remote*

- Developed ERGO method achieving **56.6%** average performance improvement over multi-turn baselines
- Recovered **15%** performance drop in multi-turn conversations using entropy-guided prompt restructuring
- Achieved **9.6%** greater performance than single-turn baselines through automated context resetting
- Reduced response variability by **35.3%**, addressing **112%** increase in conversational AI inconsistency

Artificial Intelligence Research Intern | **Published Paper** — Jan. 2025 - May 2025
Algoverse — *Remote*

- Utilized a hybrid mBERT+BiLSTM model for figurative language detection, trained on low-resource Konkani
- Achieved an accuracy of **83%** for idiom classification and **78%** for metaphor classification
- Preserved **100%** of original accuracy on idiom classification while pruning attention heads
- Achieved **88%** accuracy retention on metaphor classification tasks through strategic model parameter reduction

Engineering Success Research Intern | **Research Poster** — Sep. 2023 - April 2024
San Jose State University – Charles W. Davidson College of Engineering — *San Jose, CA*

- Researched AR technology to simulate physics phenomena, visualizing wave mechanics and 3D vector fields
- Applied Dr. Peter Beyersdorf's research to explore AR's role in immersive and accessible physics education
- Proposed AR-driven virtual labs as a likely cost-effective alternative, with estimated savings of **30%** over 3–5 years
- Tested AR Physics applications on the Meta Quest 3, assessing user interaction and simulation precision

Research Activities

- **Reviewer**, COLM 2025 Workshop on Multimodal Data Quality and Standards (WMDQS)
  Evaluated research submissions in computational linguistics and machine learning.

Technical Skills

Languages: Java, JavaScript, Python, LaTeX, HTML/CSS
Frameworks & Libraries: Next.js, React, React Native, Expo, JavaFX, TailWind CSS, Pytorch
Databases: Firebase, MongoDB, SQLite
Developer Tools: Git, Visual Studio Code, Eclipse, Scene Builder, Vercel