Dylan Senarath

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EDUCATION

University of Southern California — **Los Angeles, CA**
Master of Science, Computer Science - Artificial Intelligence — *May 2026 (expected)*

- **Relevant Coursework**: Machine Learning, Natural Language Processing, Robotics, Data-Driven Decision Making

California State Polytechnic University, Pomona — **Pomona, CA**
Bachelor of Science, Electrical Engineering & Computer Engineering (Dual-Degree) — *December 2023*

GPA: 3.75 - *Magna Cum Laude*

Honors & Awards: President's List (2020, 2021, 2023), Highest GPA Award – Phi Kappa Tau (2021, 2022, 2023), Veteran Scholar Award - Phi Kappa Tau (2022), Edison STEM Scholar (2021), Boeing Scholarship (2021)

Activities & Societies: IEEE, IEEE Mentor & Mentee Program, Phi Kappa Tau (2022 Recruitment Chair & 2023 Vice President of Alumni Relations), Tau Beta Pi (Engineering Honor Society)

- **Publications:** "A Lightweight Drone Simulator", IEEE Conference for Software-Defined Systems (SDS-2023)

WORK EXPERIENCE

Keck Medicine of USC — **Los Angeles, CA**
Software Automation Intern — *September 2025 - Present*

- Support Keck Medicine of USC IS Internship & Residency Program by developing and automating workflows on the ServiceNow platform to optimize IT ticketing and service operations.

Seeds Academy — **Temple City, CA**
Stem Tutor — *January 2025 – August 2025*

- Taught robotics and programming using Micro:bit, LEGO, sensors, motors, Scratch, and Python (loops, algorithms, data structures).
- Instructed competitive CS concepts including ACSL topics (Boolean algebra, notation, recursion) and algorithm design through the USACO framework.

National Science Foundation — **University of North Texas**
Undergraduate Researcher – Machine Learning & Software Testing — *May 2023 – August 2023*

- One of 10 applicants (out of 140+) chosen to conduct research funded by the National Science Foundation at UNT.
- Part of a 3-student cohort focused on creating a lightweight drone simulator (coded in Python), equipped with multiple drone objects, network communication, a scheduling control unit, sensors, actuators, blocked cells, and tasks/instructions.
- Tested & simulated scenarios for specific industry applications such as package delivery and sensing area temperatures.

Southern California Edison — **Pomona, CA**
Transmission & Substation Intern / Part-time Employee — *May 2022 – May 2023*

- Relay Test and Automation team: upgraded and maintained substation protective equipment including relays, HMI & PLC.
- Created test plans for protection relays on circuit breakers, transformers, and long-distance lines (Doble Protection Suite).

Transmission & Distribution Intern — *May 2021 – August 2021*

- Grid Mod Strategy team: planned and assessed power distribution in Southern California to offset load from the grid.

PROJECTS

MoodTunes: An NLP-Driven Emotion-Based Music Recommendation System — **Spring 2025**

- Developed a multi-label emotion classification system using an attention-based DistilBERT model fine-tuned on the GoEmotions dataset, incorporating data augmentation, class rebalancing, and optimized per-class threshold calibration.
- Engineered an end-to-end NLP pipeline that maps predicted emotions from user input to songs from the Emotions4MIDI dataset using lyric-based emotion scores, enabling personalized music recommendation across 28 emotion categories.
- Optimized model training and evaluation with mixed-precision training, learning rate scheduling, and emotion-specific threshold tuning, achieving efficient inference and robust performance across imbalanced emotion classes.

Sentiment Analysis on Amazon Reviews Dataset (NLP) — **Spring 2025**

- Developed sentiment classification models using Amazon reviews data, applying text preprocessing techniques such as stopword removal, lemmatization, and TF-IDF feature extraction.
- Trained machine learning models including Perceptron, SVM, Logistic Regression, and Naïve Bayes, and implemented deep learning models (MLP, CNN) with Word2Vec embeddings to compare performance.
- Analyzed the impact of pre-trained vs. custom-trained Word2Vec embeddings on classification accuracy, using PyTorch and Scikit-learn to evaluate model effectiveness across binary and ternary sentiment classes.

Competitive Go Agent — **Fall 2024**

- Designed AI agents for Little-Go, focused on strategic decision-making, optimal move generation, & real-time board evaluation.
- Implemented rule enforcement and policy-driven move generation techniques, considering game rules and opponent weaknesses.
- Enhanced agent performance through iterative self-play and evaluation, competing against opposing AI agents using strategies like Minimax with alpha-beta pruning and Q-Learning.

SKILLS

- **Programming Languages**: Python, C, C++, C#, Verilog, Assembly, JavaScript, HTML, SQL
- **Software Programs:** Pytorch, Sklearn, Matlab, LTspice, Pspice, Simulink, Vivado, MPLAB, Labview