Jacob A. Frausto

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EDUCATION

STANFORD UNIVERSITY — **STANFORD, CA**
M.S. Computer Science (AI), GPA: 3.825/4.0 — Expected June 2025

BROWN UNIVERSITY — **PROVIDENCE, RI**
Sc. B. Computer Science, GPA: 3.8/4.0 — 2019 – 2023

Relevant Coursework: *Deep Learning for Computer Vision, Decision Making under Uncertainty, Software Engineering, Algorithms and Data Structures, Discrete Structures and Probability, Machine Learning, Computational Linguistics, Data Science*

EXPERIENCE

LINKEDIN — **Sunnyvale, CA**
Artificial Intelligence Engineer Intern — June 2024 – Present
- Fostering innovation within the Learning AI team.

STANFORD INTELLIGENT SYSTEMS LAB (SISL) — **Stanford, CA**
Graduate Research Assistant — January 2024 – Present
- Researched safety validation for autonomous systems using a neural radiance field (NeRF) as a surrogate model.
- Executed 500+ simulations with a NeRF trained on a simulated environment uncovering failure modes (collisions).
- Implemented two uncertainty quantification methods to measure confidence in density predictions made by the NeRF.

STANFORD UNIVERSITY — **Stanford, CA**
Course Assistant — September 2023 – Present
- Courses include CS 148 (Computer Graphics & Imaging), CS 229 (Machine Learning), and CS 221 (Artificial Intelligence)
- Topics include: ray tracing, geometric modeling, supervised/unsupervised/reinforcement learning, Markov/Bayesian networks.

VERITAS AI — **Cambridge, MA**
AI & Data Science Mentor — July 2023 – August 2023
- Guided groups of 3-4 students in practical application of fundamental AI and ML concepts through hands-on projects.

BROWN INTERACTIVE 3D VISION & LEARNING LAB (IVL) — **Providence, RI**
Undergraduate Research Assistant — January 2022 – May 2023
- Explored the application of NeRFs for scene modeling tasks.
- Designed and built a wrist-mounted multi-camera prototype to capture egocentric video data.
- Managed lighting control module for interactive capture stage, resulting in a comprehensive dataset of dynamic and static scenes.

SAMSARA — **San Francisco, CA**
Software Engineer Intern — May 2022 – August 2022
- Developed a paginated report feature that provides customers with a holistic view of their device connectivity data.
- Employed data-driven insights to optimize the performance/behavior of several in-house React components.

AMAZON (AWS) — **New York, NY**
Software Development Engineer Intern — June 2021 – August 2021
- Designed and deployed a service in Java to collect and aggregate metrics on the performance of SAT/SMT solvers.
- Utilized AWS microservices to construct cloud-based pipelines and infrastructure.

BROWN UNIVERSITY — **Providence, RI**
Undergraduate Teaching Assistant — September 2020 – December 2020
- Assisted professor to re-design projects, manage coursework, and grade assignments for 300+ students.
- Held 4 hours of office hours weekly to help students understand technical and conceptual components of the course.

PROJECTS

DeepQHoldem: Applying Deep Q-Learning to No-Limit Texas Hold'em Poker, *CS 238 & CS 221* — December 2023
- Engineered an agent achieving a win rate of 71.70% and expected earnings per round of 140.2567 against random agent.
- Performed rigorous experimentation with 10,000 rounds to optimize the learning process of the agent.

Swish Science: Predicting NBA Success with Data Visualization, *CSCI 1951A* — May 2023
- Analyzed 13,504 data points, identifying possession-related statistics as key factors impacting NBA team success.
- Developed logistic regression model that predicts team performance with 81.18% test accuracy.

genClassBezier2D, *Personal* — January 2022
- Constructed a procedure to generate several datasets of abstract 2D shapes formed using Bezier curves.
- Produced the architecture for a CNN model that classifies said shapes with 97.53% testing accuracy.

GeoGuessing With Photo Localization and Deep Learning, *CSCI 1430* — December 2021
- Trained and utilized a CNN model to predict the geographical location of images taken within the 50 U.S. states.
- Achieved a testing accuracy of 20.7% as opposed to 4% accuracy attained by human subjects.

Contrastive Self-Supervised Image Classification with SimCLR, *CSCI 1470* — December 2021
- Implemented SimCLR self-supervised model, achieving 77.4% top-1 and 94.8% top-3 accuracy on a held-out test dataset.
- Demonstrated superiority of self-learned representations and highlighted optimization possibilities.

TECHNICAL SKILLS

Languages: Python, Java, Go, JavaScript, C, C#, C++, Julia, SQL, GraphQL

Frameworks & Libraries: PyTorch, TensorFlow, scikit-learn, OpenCV, Linux, ROS, React, Selenium, Beautiful Soup