JEFFREY TSENG

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San Jose, CA

**EDUCATION**

**Leland High School,** San Jose, CAExpected Graduation: May 2025

High School Diploma *GPA:4.2/4.0*

**Leland High School Student Body President** San Jose, CA

*School President* September 2021– Present

* Oversees 1600+ students, and manages school-wide events fostering a strong, collaborative student community
* Allocates $170,000+ across 68 events, sports, school store, and leadership, ensuring a smooth school year with suitable events
* Represents the student body, working with district superintendents and school administration, attending school district meetings to voice concerns and enact policies

**Relevant Classes: Multivariable Calculus, AP Calculus BC, AP Physics II, AP Physics I, AP Computer Science A**

**RELEVANT EXPERIENCE**

**MIT Beaver Works** Cambridge, MA

*Student* July 2024 – August 2024

* Developed radar imaging back-projection algorithms in Python and C++ using NumPy, SciPy, and Matlab to process radar data and generate images, processing radar data enabling high-resolution imagine of 2.6 in. soda cans across 10 by 10 meters
* Built an F550 Hexacopter, with a PulsOn 440 radar with a Raspberry Pi via socket programming for real-time data transmission
* Engaged with industry experts in sectors such as defense, transportation, materials, and engineering, through workshops and lectures focused on groundbreaking technological innovations

**Idiopathic Pulmonary Fibrosis Research** Stanford University, CA

*Researcher* June 2023 – October 2023

* Performed bulk and single-cell RNA sequencing after extensive training in R, applying data science to biological research
* Conducted wet lab experiments on human lung fibroblasts, focusing on Idiopathic Pulmonary Fibrosis and the effect of pirfenidone on serum-stimulated human lung fibroblasts
* Gained hands-on experience in DNA/RNA isolation, PCR, and ELISA, developing a strong foundation in molecular biology
* Collaborated with Stanford researchers to explore biological findings and contribute to ongoing research on pulmonary diseases

**604 Robotics** San Jose, CA

*Active Member* September 2022 – Present

* Placed 5th globally, playing a pivotal role in selecting alliance partners, including at the FIRST FRC World Championships
* Collaborates on data-driven decision making, refining competition data by examining specific statistics of teams throughout each of their matches to identify trends in strategy and compatibility
* Analyzes and scouts hundreds of matches during tournaments, parsing data to optimize alliance partner selection
* Engages regularly with mentors, providing feedback and strategic advice on robot performance and match outcomes

**UC Berkeley Robot Open Autonomous Racing Program** Berkeley, CA

*Competitor and Alumni* July 2022 – December 2022

* Engineered and integrated ROS-based communication channels, designing interfaces between perception, decision-making, and control modules to streamline autonomous vehicle functionality in real-world conditions
* Designed and tested autonomous vehicle simulations in Gazebo, leveraging machine learning models and applying mathematical concepts such as matrix operations, probabilistic models, and gradient descent to optimize path planning
* Collaborated with UC Berkeley professors to develop Python, machine learning, and advanced control algorithms

**USA Hockey** San Jose, CA

*Lead Referee* April 2021 – Present

* Maintain standard of play to ensure that game rules are respected and followed in an unbiased manner
* Resolve conflicts with coaches and players to provide an understanding behind points, calls, and violations
* Communicated and resolved conflicts between parents, players, and coaches, mediating the game
* Stay up to date on rules and regulations as they change year to year

**SKILLS AND INTERESTS**

**Languages:** Native Fluency in English and Mandarin Chinese, Elementary proficiency in German and Spanish

**Interests:** Radars, Ice Hockey, Logic Problems, Traveling, Astronomy, Pop Music

**References Available Upon Request**