

# ALEXANDER TAKAMOTO

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## EDUCATION

**Bachelor of Data Science**, UC San Diego

Expected 2027

Minor in Economics

GPA 3.95

Relevant Coursework: AI: Probabilistic Models, Data Management (SQL), Econometrics, Practice of Data Science

## SKILLS AND INTERESTS

**Languages:** Java, R, Python, SQL, HTML/CSS

**Libraries:** Pandas, NumPy, SciPy, NLTK/VADER, Matplotlib, Seaborn, Scikit-learn

**Hobbies:** Running, Chess, Reading Science Fiction, Board Games

## EXPERIENCE

**Undergraduate Research Assistant, Onizuka Lab**

Jun 2025 - Present

University of Osaka, Graduate School of Information Science and Technology

*Osaka, Japan*

- Integrated FairDrop (biased edge dropout) into a PyTorch-Geometric GNN framework to mitigate sensitive-attribute homophily
- Analyzed trade-offs between node-classification accuracy and fairness (Statistical Parity & Equal Opportunity gaps), produced visualizations, and documented findings

**Research Assistant**

Sep 2024 - Present

UCSD GIS Lab

*San Diego, CA*

- Used GeoPandas to analyze skill transferability across migrants after policy in Indonesia and visualized differences across subdistricts
- Built travel-time accessibility maps using GIS data to create map of travel times to estimate global accessibility

**Summer Intern**

Jun 2024 - Aug 2024

SF Department of Public Health

*San Francisco, CA*

- Drafted sections of Community Health Assessments, gathering and summarizing key health indicators under staff guidance
- Met with public health leaders & learned how different sectors collaborate to meet community needs

**Assistant Teacher**

Jun 2022 - Aug 2022

TechKnowHow

*San Francisco, CA*

- Instructed students on engineering principles using Lego robotics; introduced basic coding ideas through Scratch
- Created course materials and led STEM activities for students throughout the day

## PROJECTS

**Esports Win-Loss Predictor** Built a Random Forest model on 150K+ rows of League of Legends data; did feature engineering, permutation tests, fairness evaluation; achieved 75.7% accuracy.

**UCSD Building Occupancy Tracker** AWS Lambda + Google Sheets pipeline to ingest and normalize Waitz real-time JSON, append into a centralized sheet + live dashboard.

**Exoplanet Habitability Prediction Tool** Streamlit app with Logistic Regression classifying exoplanets by astrophysical features; dynamic sliders & live probability output.

**Hospital Satisfaction Predictor** XGBoost regression for patient survey ratings; applied LIME & SHAP for interpretability; MSE 0.384