Joel Tam

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EDUCATION

University of California, Berkeley **Aug. 2024 – Present**
Master of Science in Transportation Engineering, Graduate Certificate in Applied Data Science *GPA: 3.7*
Certifications: Transportation Departmental Fellowship, **Engineering-in-Training (EIT)**

University of California, Berkeley **Aug. 2020 – May 2024**
Bachelor of Science in Civil and Environmental Engineering *GPA: 3.5*

TECHNICAL SKILLS

Programming Languages: Python, SQL, MATLAB (Simulink), R, FME
Software & Tools: ArcGIS, QGIS, AutoCAD, Civil 3D, Microstation, PowerBI, Excel, SUMO
Transportation Analysis: Geospatial Data Processing, Travel Demand Forecasting, Regression Analysis

EXPERIENCE

Transportation Sustainability Research Center **Aug. 2023 – Present**
Graduate Researcher *Berkeley, CA*

- Processed 14,660 trips across 22 stations for the Redding Bikeshare program, identifying recreational and commuter patterns through geospatial analysis to calculate VMT and GHG reductions through the program.
- Authored a 20-page report on microtransit pilots, gathering insights from 50+ sources to guide transit policy decisions.
- Produced a 15-page analysis on North American bike lending programs and EV charging infrastructure, informing sustainable transportation policy recommendations.

SafeTREC **Aug. 2024 – Present**
Graduate Researcher *Berkeley, CA*

- Developed an automated system to analyze 40+ years of Caltrans/FHWA data, using regression models to quantify induced demand trends across 58 CA counties, providing insights for infrastructure planning.
- Constructed a framework and model to analyze 200+ pedestrian collision reports for a Caltrans-sponsored project, improving risk factor identification and supporting data-driven pedestrian safety planning.

Lawrence Livermore National Laboratory **May 2024 – Aug. 2024**
Critical Infrastructure Analyst Intern *Livermore, CA*

- Implemented machine learning models that achieved 90% accuracy in predicting features and vulnerabilities across 55,000+ power substations, enhancing risk mitigation strategies.
- Enhanced scoring algorithms for a DOE risk assessment report, improving detection of vulnerabilities in 10 global cyber, physical, and supply chain events to strengthen national infrastructure resilience.

TranSystems **Dec. 2023 – May 2024**
Transportation Engineering Intern *Berkeley, CA*

- Refined alignments and corrected geometries for a 6+ mile CCJPA Sac-Roseville Third Track project, ensuring permitting compliance and designing traffic engineering utilities for at-grade railroad crossings.
- Assessed cost estimates, schedule oversight, and risk mitigation for 9 FRA bridge replacement projects along the Northeast Corridor, improving risk management for major rail infrastructure.
- Reviewed and adjusted utility profiles and inverts at LAX to ensure proper clearances and hydraulic function.
- Performed slope grading using Civil 3D for the USCG Guam site, ensuring ADA compliance and effective drainage.

Arup **Jun. 2023 – Aug. 2023**
Transportation Planning Intern *San Francisco, CA*

- Performed geospatial analysis across 6 Central Valley counties, integrating OpenTripPlanner API and GTFS data to optimize transportation models. Evaluated mobility patterns through land use assessments and enabled accurate travel time predictions for identifying 21 optimal bus stop locations across 4 modes.
- Designed sustainable site plans for the California High-Speed Rail, including initial iterations of the Kings-Tulare Station layout, balancing functionality with eco-conscious design.
- Developed a Python script to identify active transit operators within or crossing a region, efficiently filtering through 2000+ operators to improve regional transit planning.

Topcon Positioning Systems **Jun. 2022 – Aug. 2022**
Survey Technician Intern *Livermore, CA*

- Achieved 99.6% accuracy in stockpile volume modeling, leveraging geospatial tools like GPS, LiDAR, and lasers.