

Camryn Gonzalez Ching is a Staff Consultant for Engineering Systems Inc. (ESi) in the Civil, Structural, and Environmental Practice Group. She has a Bachelor of Arts degree from the University of California, Los Angeles in Geography/Environmental Studies with a minor in Geospatial Information Systems and Technologies. Before joining ESi, Mrs. Gonzalez Ching worked as a middle school math teacher. Subsequently, she earned a Master of Science in Geographic Information Science with an emphasis on remote sensing. During this time, Mrs. Gonzalez Ching became a licensed FAA Part 107 sUAS (small unmanned aerial system) commercial drone operator. She specializes in data visualization and spatial analysis, with a focus on LiDAR and satellite imagery.

Education

MS, Geographic Information Science. California State University, Long Beach. 2023

BA, Geography/Environmental Studies. Minor, Geospatial Information Systems and Technologies. University of California, Los Angeles. 2019

Licenses & Certifications

- FAA Part 107 sUAS Certified (Commercial Drone Operator)
- FARO Focus Scanner User Certification

Positions Held

Engineering Systems Inc., Irvine, California

- Staff Consultant, 2023 – Present

Montebello Unified School district, Bell Gardens, California

- Teacher, 2023

California State University, Long Beach, Long Beach, California

- Instructional Student Assistant, 2023

Contact Information

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ESi Irvine

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Irvine, CA 92618

Areas of Specialization

- Data Visualization
- Geographic Information System (GIS)
- Storm Damage Investigation
- Wildfire Damage Assessment

Bright Star Schools, Los Angeles, California

- Teacher, 2021 – 2023

Los Angeles City Hall – Mayor’s Office, Los Angeles, California

- Data Team Intern, 2018

Professional Affiliations/Honors

Geospatial Professional Network, GPN

- Member

Project Experience

GIS & Remote Sensing Investigations

Flood Origin and Watershed Analysis for Residential and Commercial Properties

- Performed detailed hydrologic analyses using LiDAR-derived DEMs to delineate watershed boundaries and model flow paths toward affected structures.
- Quantified upstream contributing areas and assessed the degree to which burned terrain increased runoff potential.
- Analyses identified the likely source of floodwater and were included in expert reports supporting cause-and-origin determinations.

Wildfire Burn Severity and Debris-Flow Hazard Analysis

- Analyzed 10 major wildfire sites in New Mexico and California to determine post-fire debris-flow risk for hundreds of affected properties.
- Integrated burn severity maps, DEM-derived slope, hydrological flow models, and land cover data to evaluate future flooding potential.
- Findings informed property repair plans and guided recommendations for site stabilization and landscape restoration.

Environmental Modeling & Terrain Analysis

Lidar Classification and Terrain Modeling

- Processed LiDAR point clouds to classify ground, vegetation, and built structures for use in forensic analyses, flood modeling, and site assessments.
- Generated high-resolution DEMs and extracted terrain metrics to support hydrologic modeling and engineering evaluations.

3D Forested Site Model for Unsurveyed Property

- Developed a 3D model of a 50-acre densely forested area using lidar data to estimate tree count, canopy height, and vegetation distribution.
- Provided spatial insights for a site assessment where no ground survey data existed, enabling engineers to evaluate site conditions and vegetation characteristics.

Vegetation and Canopy Health Assessment

- Applied multispectral and Near Infrared (NIR) imagery to evaluate vegetation condition and potential hazards (e.g., drought stress, post-fire recovery).

Geospatial Data Science & Statistical Analysis

Water Usage Analysis and Water Source Evaluation

- Performed statistical modeling to evaluate water-use patterns across over 500 properties for a community experiencing flooding.
- Integrated water meter data with precipitation and evapotranspiration time-series to identify irrigation-driven contributions to flooding.
- Produced data visualizations and analytical findings used to determine the relationship between water use and localized flood impacts.

Timeline & Documentary Analysis

Commissioning Timeline Reconstruction for LNG Plant

- Reviewed more than 600 technical documents, including weekly status reports, engineering drawings, and commissioning logs, to reconstruct the operational timeline of an LNG facility.
- Identified schedule delays, inconsistencies in reported production levels, and issues affecting critical plant systems.

Historical Roof Repair Timeline Reconstruction

- Analyzed aerial imagery to construct a decade-long timeline of roof repair activities.
- Findings clarified long-term deterioration patterns and contributed to forensic evaluations of roof condition and maintenance history.

Presentations

“Lidar-Based Tree Classification and Feature Extraction and Exploration of Classification Methods Using Arc-GIS Pro and Deep Learning Techniques,” **Gonzalez Ching, C**, Flores, I, and Lazor, J., Presented at the 2024 Geospatial Summit, Los Angeles, CA, February 23, 2024.