

VERNONIKA MEHKYLE L. CASTANEDA

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Open to relocation

EXECUTIVE SUMMARY

Passionate about earthquake engineering, I am currently seeking internships to enhance my practical skills in seismic-prone regions. Looking forward, I am committed to pursuing a master's program after graduation to deepen my understanding of seismic phenomena and contribute to advancements in earthquake-resistant design and construction practices.

EDUCATION

Texas A&M University - Corpus Christi

Bachelor of Science, Civil Engineering

Current GPA: 3.907/4.0

Relevant coursework: Geotechnical Engineering I, Reinforced Concrete Design, Construction Materials Design, Structural Engineering, Hydraulics and Hydrology, and Project Management

Corpus Christi, TX

Graduation: Spring 2024

Del Mar College

Associate of Science, Mechanical Engineering

Corpus Christi, TX

June 2020 - May 2023

PROFESSIONAL EXPERIENCE

National Hazards Engineering Research Infrastructure: Large-Scale Mobile Shakers

Kona, HI and Austin, TX

Undergraduate Research Intern (Publication: <https://doi.org/10.17603/ds2-t4bd-8w49>)

June 2023– August 2023

- Provided field support on post-liquefaction soil investigations on calcareous sediments on three different sites in Kawaihae Harbor.
- Utilized in situ field testing like Spectra-Analysis of Surface Waves (SASW), Cone Penetration Testing (CPT), Down-hole testing (DHT), and Cross-Hole Testing (CHT).
- Analyzed seismic (p- and s-) wave emissions data using MATLAB, analytically identifying wave arrival points following ASTM D4428/D4428M-14 to determine saturation and stiffness in concluding seismic site response.

Aero-Structural Optimization (ASTRO) Lab at TAMU-CC

Corpus Christi, TX

Research assistant

July 2022 – Present

- Application of earthquake loads into wind-resistant structural design using Finite Element Models (FEM), resulting in an enhanced multi-hazard performance evaluation framework.
- Engineered a 20% performance enhancement in a Python script for Abaqus, facilitating an efficient interface with MATLAB for computational analysis and optimization of sectional properties in simulated bridge designs.

City of Corpus Christi – Water Utilities Department

Corpus Christi, TX

Engineering Intern

October 2022 – June 2023, September 2023 – Current

- Successfully implemented preventive maintenance by active and inactive manholes and pipes inspection, and GIS data updates.
- Reduced the number of pending work orders by 23% through pipe inspections in WinCan. Rated conditions and recommended appropriate operations and updated the conditions on Maximo.
- Assist Engineers by verifying accuracy and precision of proposed water plans, ensuring submittals comply with the city specifications.

CERTIFICATION

CI Research 4 Social Change REU Code-a-thon

June 2023

Certified by: Texas Advanced Computing Center and The University of Texas at Austin

SKILLS

Software: MATLAB, Python, Jupyter and Microsoft Office

Technical and Design: CHT, CPT, DHT, AutoCAD, Manual Drafting, WinCan, NI Multism, Abaqus, ArcGIS and Autodesk Inventor

Soft and organization skills: strong collaboration, communication, and problem-solving skills and show initiative and leadership, detail-oriented, organized, and can effectively handle multiple projects.

Language: Tagalog, Bisaya, and English

COMPETITIONS

Geowall Competition for the GeoCongress

2023 – 2024

- Design and build a model mechanically stabilized earth (MSE) retaining wall using minimal reinforcement, communicate analysis and design processes.

PROFESSIONAL MEMBERSHIPS

Society of Advancement of Chicanos and Native Americans in Science (SACNAS)

Corpus Christi, TX

Vice President, TAMU-CC Chapter

2022 – Present

- Promote STEM undergraduate research through verbal and written communication among the student body, creating a professional student and professor/mentor relationships within campus.
- Managing the organization of through Initiating meetings, host workshops, and other student involvement activities to promote active participation.

Society Of Hispanic Professional Engineers (SHPE)

Corpus Christi, TX

Member, SHPETina(2022), TAMU-CC Chapter

2021 – Present

- Engaged with other members and guests through attending meetings and workshops.

- Promoting female inclusion in STEM programs and communicating with other campus organizations for promoting women in the workforce.

American Society of Civil Engineers (ASCE)

Corpus Christi, TX

Member, Geo-Institute

2023 – Present

- Engaged in ASCE activities, fostering connections with both student and professional members.