Elias Vance

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Objective

Highly motivated and detail-oriented Civil Engineering student with a passion for sustainable infrastructure and fluid dynamics. Seeking a Pipeline Engineer Intern position to apply theoretical knowledge in pipe system design, stress analysis, and materials selection to real-world projects. Eager to contribute to a team and gain hands-on experience in the energy and water sectors.

Education

Stanford University Master of Science in Civil and Environmental Engineering, expected May 2026

- Specialization: Infrastructure and Engineering Management
- Relevant Coursework: Fluid Mechanics, Hydraulics, Pipe Flow Design, Geotechnical Engineering, Steel and Concrete Structures, Project Management

University of California, Berkeley Bachelor of Science in Civil and Environmental Engineering, Graduated May 2024

- GPA: 3.8/4.0
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Awards: Dean's List (2022, 2023, 2024)

Skills

- Engineering Software: AutoCAD, SolidWorks, MATLAB, ArcGIS, EPANET
- Programming: Python (NumPy, Pandas, Matplotlib), R
- Technical: Hydraulic Modeling, Stress Analysis (Finite Element Method), Materials Science, GIS Mapping, Risk Assessment, Pipeline Integrity Management
- Soft Skills: Technical Report Writing, Team Collaboration, Problem Solving, Data Analysis

Projects

Hydraulic System Analysis of a Municipal Water Network Individual Project, Stanford University, Fall 2025

- Developed a hydraulic model of a simplified urban water distribution network using EPANET.
- Simulated flow rates, pressure fluctuations, and water quality under various demand scenarios.
- Analyzed the model to identify critical nodes and recommend pipe diameter

adjustments to optimize performance and reduce energy consumption.

Pipe Stress Analysis for a High-Pressure Gas Pipeline Group Project, UC Berkeley, Spring 2024

- Collaborated with a team of four to perform stress analysis on a simulated natural gas pipeline segment.
- Used Python to script calculations for hoop stress and longitudinal stress based on internal pressure, temperature changes, and external loads.
- Created a comprehensive technical report detailing the findings and recommended appropriate pipe wall thickness and support structures.

Experience

Structural Engineering Intern AECOM, San Francisco, CA | May 2024 - Aug 2024

- Assisted senior engineers with structural load calculations for building foundations and steel frame designs.
- Utilized AutoCAD to create and modify detailed structural drawings.
- Contributed to site inspections and documented field observations for quality control.

Certifications

- OSHA 10-Hour Construction Safety Certification
- EPANET Certified Professional (simulated)
- Certificate in GIS for Civil Engineers

Interests

- Energy systems, water resources management, sustainable infrastructure development.
- Python scripting for engineering applications.
- Hiking, camping, and amateur photography.