

# Alonso Diego Fernandez

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## EDUCATION

- **The University of Texas at Austin** Austin, TX  
*M.S. - Energy and Earth Resources; GPA: -* Aug 2024 - May 2026 (Expected)
  - **Relevant Courses:** Energy, Technology, & Policy; Data Analysis, Optimization, & Visualization; Decision Engineering; Energy Finance
- **The University of Texas at Rio Grande Valley** Edinburg, TX  
*B.S. - Mechanical Engineering; GPA: 3.56/4.00* Aug 2018 - Dec 2023

## SKILLS SUMMARY

- **Programming:** Python, Bash, L<sup>A</sup>T<sub>E</sub>X
- **Tools:** Solidworks, Revit, AutoCad, LabView
- **Technical:** Forklift, Scissorlift, Hydraulic Press

## EXPERIENCE

- **Jacobs Solutions, Energy and Power** Austin, TX  
*Mechanical Engineering Intern* May 2024 - Present
  - **Feasibility Analysis:** Worked on a project for a government client with a requirement to have a net-zero building portfolio by 2050. The evaluation included multiple approaches for the client to reach this goal, including implementing a chilled and hot water district energy system with a geothermal bore-field.
  - **District Energy Systems:** Routed, sized, and estimated costs for the hot water and chilled water distribution of the entire campus. I also evaluated mechanical equipment (pumps, chillers and heat-pumps) capacities to match heating and cooling demands.
  - **MEP Revit Training:** Underwent a Revit training for MEP-type work. Added mechanical equipment and plumbing to an architectural floor plan following ASHRAE standards and building code requirements.
- **Computational Fluid Dynamics Research, UTRGV** Edinburg, TX  
*Undergraduate Researcher* Aug 2023 - Dec 2023
  - **TACC Simulations:** Using Nek5000 code developed by Argonne National Laboratory, I ran simulations on UT Austin's advanced computing resources— Stampede2 and Lonestar6
  - **Data Post-Processing:** Visualized the simulation data into animations and figures of turbidity/gravity currents with MATLAB.
- **GE Vernova** Houston, TX  
*Gas Power Technical Engineering Intern* May 2023 - Aug 2023
  - **O&M Procedures:** Developed standard operating and maintenance procedures for the fuel-oil system of a gas turbine power plant in Switzerland. I looked at piping and instrumentation diagrams of balance of plant systems such as the fuel filtration module, heating skid, and storage tanks.
  - **Dual-Fuel System Research:** Researched fuel contamination issues of a gas turbine with dual-fuel capability and wrote a document suggesting an operator to stop running solely on fuel-oil.
  - **Technical Training:** Took on over 30 hours of industry led courses: Energy Industry Fundamentals, Gas Turbine 101, Generator 101, Nuclear Energy, Hydro Power, Offshore Wind.
- **Industrial Assessment Center, UTRGV** Edinburg, TX  
*Undergraduate Researcher* Aug 2022 - May 2023
  - **Energy Assessments:** Conducted no-cost energy assessments for small/medium sized manufactures. My work included analysis of electric bills and on-site data collection of manufacture processes and equipment performance with precision measuring tools. Received an "energy efficient" certification from the DOE after completing six assessments.
  - **Technical Reports:** Returned reports to client with opportunities to improve productivity, reduce waste, and decarbonize industrial processes. These recommendations included capital and operational costs with a return of investment time-span through energy savings.
- **Seaboard Foods** Kansas City, MO  
*Pricing & Product Management Intern* May 2022 - Jul 2022
  - **Pricing Consolidation Project:** Collaborated with the Financial Planning & Analysis team and created a repository to track the formula-derived prices of over 20 sales representatives. This data frame led to better planning and analysis for all their products.
  - **Commodity Markets:** Working closely with pricing and product managers, I learned why hog prices are affected by multiple factors such as grain prices, labor trends, seasonality, and geo-politics, and how these factors influence decision-making in production.
- **Mancha Screen Printing & Embroidery** Mcallen, TX  
*Assistant Manager* Dec 2020 - Dec 2021
  - **Standard Operating Procedures:** Helped implement standards and procedures for both screen printing and embroidery production processes. This approach allows for less micromanaging and more confidence in team members and effective teamwork.
  - **Day-to-Day Activities:** Involved in front end sales, customer outreach, ordering of supplies, structuring of teams, and managing cash-flows and payrolls.

- **EB International** Hidalgo, TX  
*Logistics Coordinator* *Jun 2020 - Nov 2020*
  - **Quality Control:** Started a daily routine of inspecting the cleanliness of reefers every morning to avoid delays and logistical issues. Average of weekly trips increased by 10.
  - **Coordination:** Had 20 operators of which I responsible for, transferring meat and poultry to Mexico and coming back to the United States with fruits and vegetables.
- **Hidalgo Cold Storage** Hidalgo, TX  
*Inventory and Forklift Operator* *May 2018 - May 2019*
  - **Day-to-Day Activities:** Worked in the produce warehouse loading/unloading and racking pallets of fruits and vegetables, organized rack and floor space, and conducted weekly inventory counts.
  - **Forklift Mastery:** After two weeks of being a bag-filler, I self learned how to operate a forklift and became the go-to guy for storing pallets on three story tall racks.

## PROJECTS

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- **UTRGV Senior Design *Amphibious Wagon*:** Developed for a marine biologist conducting Oyster farming research at the Laguna Madre. We created an off-road wagon to transport sensitive equipment over rough terrain and under flooded conditions. (Jan 2023 - Dec 2023)
- **STF Industrial Equipment Installation:** Tagged along with a millwright contractor to install over-head conveyor belts, motors, and process pipes in a pork processing plant. (Jun 2022)
- **Seaboard De Mexico Expansion:** Was hired to translate for a U.S. millwright contractor working on a conveyor belt expansion in a pork processing plant in Reynosa, Mexico. (Jan 2022)

## TECHNICAL REPORTS AND PUBLICATIONS

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- Alonso Fernandez et al. "Energy Assessment for an Aerospace Manufacturing Facility". EERE, US Department of Energy Technical Report TR0043. May 16, 2023.
- Alonso Fernandez et al. "Energy Assessment for a South Texas Cold Storage Warehouse". EERE, US Department of Energy Technical Report TR0042. April 27, 2023
- Alonso Fernandez et al. "Energy Assessment for a South Texas Waste Purification Plant". EERE, US Department of Energy Technical Report TR0039. February 17, 2023, pp 28-32.
- Alonso Fernandez et al. "Energy Assessment for a South Texas Waste Water Treatment Plant". EERE, US Department of Energy Technical Report TR0036. December 22, 2022, pp 12-14, 32-39.
- Alonso Fernandez et al. "Energy Assessment for a South Texas Waste Water Treatment Plant". EERE, US Department of Energy Technical Report TR0033. October 28, 2022, pp 10-13, 33-37.
- Alonso Fernandez et al. "Energy Assessment for a South Texas Foam Manufacturing Facility". EERE, US Department of Energy Technical Report TR0029. September 23, 2022, pp 1-43.

## ACTIVITIES

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- **Treasurer of Tau Beta Pi, UTRGV** Edinburg, TX  
*Kept record of all cash outflows and initiated fund raising events.* *May 2023 - Dec 2023*
- **Member of SHPE, UTRGV** Edinburg, TX  
*Attended meetings, social events, and professional development sessions.* *Aug 2021 - Dec 2023*
- **Member of ASME, UTRGV** Edinburg, TX  
*Attended meetings, social events, and professional development sessions.* *Aug 2021 - Dec 2023*

## INTERESTS AND HOBBIES

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- Cooking, Slack-lining, Biking, Reading