Fernando Lejarza

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EDUCATION

The University of Texas at Austin — **Austin, TX**
Ph.D. in Chemical Engineering (**Cumulative GPA:** 3.98/4.0) — *Aug 2018 – May 2023 (Expected)*
(Advanced coursework in Operations Research and Industrial Engineering)

Rice University — **Houston, TX**
B.S. in Chemical and Biomolecular Engineering (**Cumulative GPA:** 3.91/4.0) — *Aug 2014 – May 2018*
Minor in Computational and Applied Mathematics

PROFESSIONAL & RESEARCH EXPERIENCE

Dascena, Inc. — **Remote**
Clinical Data Science Intern — *Jun 2021 – Present*
- Developed a data-driven policy learning approach for discharging ICU patients reducing readmissions by nearly 30% (Python)

Global Operations, Dell Technologies — **Remote**
Data Science Graduate Intern — *Jun 2020 – Jul 2020*
- Built statistical and machine learning models for multivariate demand forecasting to predict system-level sales for top selling server products, improving forecast accuracy by approximately 5% relative to existing models in use (Python)
- Consolidated historical sales, planner-level forecasts, and salesforce pipeline data leveraging multiple databases (SQL)

Process and Energy Systems Engineering Group, The University of Texas at Austin — **Austin, TX**
Graduate Research Assistant — *Oct 2018 – Present*
- Designed machine learning algorithms based on nonlinear programming to infer dynamical systems from data (Python)
- Developed efficient optimization frameworks for simultaneous production/distribution planning and quality control for supply chains of highly perishable inventory, reducing operating and outdating costs by nearly 20% (Python)
- Developed robust optimization algorithms for real-time supply chain management under stochastic demand reducing uncertainty propagation (i.e., bullwhip effect) by nearly 50 % (MATLAB)

LEADERSHIP & SERVICE

Jon Brumley Texas Venture Labs, McCombs School of Business, The University of Texas at Austin — **Austin, TX**
Associate — *Jan 2021 – Present*
- Participated in a volunteer consulting project developing consumer and market research reports, analytics solutions, pricing models, and go-to-market strategies for an Agriculture Technology (AgTech) startup

Cockrell School of Engineering, The University of Texas at Austin — **Austin, TX**
Graduate Leadership Council Treasurer, McKetta Department of Chemical Engineering (ChE) — *Oct 2019 – Present*
- Generated annual budgets and other financial reports for decision-making in council meetings
- Allocated funds for enriching events in benefit of the overall graduate student body in the ChE department

Graduate Recruitment Chair, McKetta Department of Chemical Engineering (ChE) — *Oct 2019 – Mar 2020*
- Planned and executed Visit Weekend event hosting students accepted into the Ph.D. program to introduce them to the academic opportunities and culture within the ChE department — **Austin, TX**

SELECT PUBLICATIONS

- Lejarza, F., & Baldea, M. (2021). Discovering governing equations via moving horizon learning: the case of reacting systems. *American Institute of Chemical Engineers (AIChE) Journal (Submitted)*
- Lejarza, F., & Baldea, M. (2021). DySMHO: Data-Driven Discovery of Governing Equations for Dynamical Systems via Moving Horizon Optimization. *Science Advances (Submitted)*
- Lejarza, F., Pistikopoulos, I., & Baldea, M. (2021). A scalable real-time solution strategy for supply chain management of fresh produce: A Mexico-to-United States cross border study. *International Journal of Production Economics*, 240, 108212.
- Lejarza, F., & Baldea, M. (2021). An efficient optimization framework for tracking multiple quality attributes in supply chains of perishable products. *European Journal of Operational Research (In press)*
- Lejarza, F., & Baldea, M. (2021). Economic model predictive control for robust optimal operation of sparse storage networks. *Automatica,* 125, 109346.
- Tsay, C.*, Lejarza, F.*, Stadtherr, M.A., & Baldea, M. (2020). Modeling, state estimation, and optimal control for the US COVID-19 outbreak. *Scientific Reports*, 10, 10711.
- Simkoff, J. M., Lejarza, F., Kelley, M. T., Tsay, C., & Baldea, M. (2020). Process Control and Energy Efficiency. *Annual Review of Chemical and Biomolecular Engineering*, 11.

HONORS & ACCOMPLISHMENTS

Donald D. Harrington Graduate Fellowship (2021); UT Energy Week Research Competition – 2nd place (2021); Process Systems Engineering Research Award (2020); Graduate School Professional Development Award (2020); T. H, D.M Timmins Endowed Fellowship (2018); Rice Undergraduate Scholars (2018); Rice Honor Roll (2015-2017); W. M. McCardell Scholarship (2017)

SKILLS

Python (Data visualization, Pyomo, Pandas, Scikit-learn, PyTorch), SQL, MATLAB (YALMIP, MPT), GAMS, R, LATEX, Jira Software