

# Nathaniel Price, Ph.D.

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## Experience

**ICF, Golden, Colorado, US**

*Lead Data Scientist* | March 2022 - Present

*Senior Data Scientist* | May 2020 - March 2022

*Data Scientist* | October 2019 - May 2020

- Built Azure cloud computing/machine learning infrastructure from the ground up for low-cost, scalable analysis of billions of records of utility smart meter data
- Researched, prototyped, and deployed machine learning models related to utility analytics (e.g., energy disaggregation, energy savings, EV detection)
- Established cross-team Data Science Knowledge Share meetings to promote collaboration and information sharing
- Assisted other teams in scaling data science processes by advising on best practices and providing technical assistance

**University of Nebraska-Lincoln, Lincoln, Nebraska, US**

*Data Scientist* | September 2016 - October 2019

- Designed, developed, and deployed open-source, web-based, data analysis application (SQL, R, Shiny) for analyzing repeat-purchase behavior (recruitment, retention, churn, reactivation) of Nebraska sportspersons
- Mentored graduate students and facilitated data science research resulting in multiple journal publications, international conference presentations, and a book chapter

**University of Florida, Gainesville, Florida, US**

*Graduate Research Assistant* | August 2012 - July 2016

- Integrated machine learning (e.g., Gaussian process) and optimization to design engineering systems considering uncertainty in future decision making process
- Collaboratively developed optimization-based solution to The NASA Langley Multidisciplinary Uncertainty Quantification Challenge (2014)

**ONERA - The French Aerospace Lab, Palaiseau, Île-de-France, France**

*Ph.D. Student Researcher* | October 2014 - March 2016

- As part of international joint-PhD collaboration between 2 universities (UF, EMSE) and ONERA aerospace lab, developed a novel method for optimal design under uncertainty that incorporated risk of future redesign into design optimization
- Co-authored book chapter on advanced space vehicle design under uncertainty

**University of Florida, Gainesville, Florida, US**

*Undergraduate Research Assistant* | September 2011 - August 2012

- Created parameterized biomechanical model in Python to understand interactions of patient variability and design changes on safety of Biomet rigid sternal fixation device
- Awarded Biomedical Engineering Society (BMES) Design and Research Award and Knox T. Millsaps Outstanding Undergraduate Paper Award

**SpaceX, Cape Canaveral, Florida, US**

*Launch Engineer Intern* | August 2010 - January 2011

- Performed maintenance of launch vehicle ground systems
- Ground crew team member during launch of SpaceX COTS Demo Flight 1

## Education

### Doctorate | Mechanical Engineering

University of Florida, Gainesville, Florida, US | 2016

École des Mines de Saint-Étienne, Saint-Étienne, Rhône-Alps, France | 2016

### Graduate Certificate | Scientific Computing

University of Florida, Gainesville, Florida, US | 2014

### Master of Science | Mechanical Engineering

University of Florida, Gainesville, Florida, US | 2014

### Bachelor of Science | Mechanical Engineering

University of Florida, Gainesville, Florida, US | 2012

## Publications

📖 2 book chapters 📄 5 peer-reviewed journal publications 📄 5 conference papers

Full List Available On Google Scholar: <https://scholar.google.com/citations?user=rXaKUoEAAAAJ&hl=en>

### Select Publications:

Balesdent, Mathieu, Loïc Brevault, Nathaniel B. Price, Sébastien Defoort, Rodolphe Le Riche, Nam-Ho Kim, Raphael T. Haftka, and Nicolas Bérend. 2016. "Advanced Space Vehicle Design Taking into Account Multidisciplinary Couplings and Mixed Epistemic/Aleatory Uncertainties." In *Space Engineering: Modeling and Optimization with Case Studies*, edited by Giorgio Fasano and János D. Pintér, 1–48. Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-319-41508-6\\_1](https://doi.org/10.1007/978-3-319-41508-6_1).

Chaudhuri, Anirban, Garrett Waycaster, Nathaniel Price, Taiki Matsumura, and Raphael T. Haftka. 2015. "NASA Uncertainty Quantification Challenge: An Optimization-Based Methodology and Validation." *Journal of Aerospace Information Systems* 12 (1): 10–34. <https://doi.org/10.2514/1.1010269>.

Price, Nathaniel B., Christopher J. Chizinski, Joseph J. Fontaine, Kevin L. Pope, Micaela Rahe, and Jeff Rawlinson. 2020. "An Open-Sourced, Web-Based Application to Improve Our Ability to Understand Hunter and Angler Purchasing Behavior from License Data." *PLOS ONE* 15 (10): e0226397. <https://doi.org/10.1371/journal.pone.0226397>.

## Data Science Skills

**Cloud Computing:** Azure • AWS • high-performance computing (Azure Batch) • NoSQL (Azure Table/Blob, AWS S3) • containers (Docker, Azure ACI, Azure ACR)

**Communication:** presentations • dashboard design (Shiny) • data analysis reports (Rmarkdown, Jupyter) • data visualization (plotly, ggplot2, leaflet) • peer-reviewed publications (journal, book chapter, conference)

**Numerical Methods:** optimization (stochastic, genetic, multi-start) • differential equations

**Programming Languages:** R • Python • SQL • Matlab • C++

**Software Development:** source control (Git, SVN) • agile development (Jira) • CI/CD (Azure DevOps) • automated testing

**Statistics:** machine learning • data analysis • surrogate models • cross-validation • uncertainty quantification • Monte Carlo simulation • experimental design • survey methodology