

# Nathaniel Price

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## Education

2016	<b>Joint Ph.D. Mechanical Engineering</b> Gainesville, Florida, US and Saint-Étienne, Rhône-Alps, France	University of Florida and École des Mines de Saint-Étienne
2014	<b>Graduate Certificate in Scientific Computing</b> University of Florida	University of Florida
2014	<b>M.S. Mechanical Engineering</b> University of Florida	University of Florida
2012	<b>B.S. Mechanical Engineering</b> University of Florida	University of Florida

## Experience

May 2020 - present	<b>Senior Data Scientist</b> Golden, Colorado, US <ul style="list-style-type: none"><li>As part of 2 person team, built cloud computing/machine learning infrastructure (NoSQL, Azure DevOps pipelines, batch computing, etc.) from the ground up for low-cost, scalable analysis of billions of records of utility smart meter data</li><li>Rapidly researched, prototyped, and deployed machine learning algorithms for energy disaggregation and electric vehicle charging detection</li><li>Established monthly, cross-team Data Science Knowledge Share meetings to promote collaboration and discuss topics such as scaling knowledge, Azure DevOps, and coding best practices</li></ul>	ICF
Oct 2019 - May 2020	<b>Data Scientist</b> Golden, Colorado, US	ICF
Sep 2016 - Oct 2019	<b>Data Scientist</b> Lincoln, Nebraska, US <ul style="list-style-type: none"><li>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</li><li>Mentored graduate students and facilitated data science research resulting in multiple journal publications, international conference presentations, and a book chapter</li></ul>	University of Nebraska-Lincoln
Oct 2014 - Mar 2016	<b>Ph.D. Student Researcher</b> Palaiseau, Île-de-France, France <ul style="list-style-type: none"><li>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</li><li>Co-authored book chapter on advanced space vehicle design under uncertainty</li></ul>	ONERA - The French Aerospace Lab
Aug 2012 - Jul 2016	<b>Graduate Research Assistant</b> Gainesville, Florida, US <ul style="list-style-type: none"><li>Integrated machine learning (e.g., Gaussian process) and optimization to design engineering systems considering uncertainty in future decision making process</li><li>Collaboratively developed optimization-based solution to The NASA Langley Multidisciplinary Uncertainty Quantification Challenge (2014)</li></ul>	University of Florida
Sep 2011 - Aug 2012	<b>Undergraduate Research Assistant</b> Gainesville, Florida, US <ul style="list-style-type: none"><li>Created parameterized biomechanical model in Python to understand interactions of patient variability and design changes on safety of Biomet rigid sternal fixation device</li><li>Awarded Biomedical Engineering Society (BMES) Design and Research Award and Knox T. Millsaps Outstanding Undergraduate Paper Award</li></ul>	University of Florida

Aug 2010 - Jan 2011 **Launch Engineer Intern**

SpaceX

Cape Canverval, Florida, US

- Performed maintenance of launch vehicle ground systems
- Team member for 2010 rollout and launch of Falcon 9 Flight 2

## Data Science Skills

**Cloud Computing:** Azure • AWS • high-performance computing (Azure Batch) • NoSQL (Azure Table/Blob)

**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) • methods for 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 • cluster analysis • factor analysis • principal components analysis • cross-validation • Monte Carlo simulation • generalized linear regression • experimental design • survey methodology

## Publications

📖 2 book chapters

📄 5 peer-reviewed journal publications

✍️ 5 conference papers

📦 3 open-source software packages

Full List Available on Google Scholar: <https://scholar.google.com/citations?hl=en&user=rXaKU0EAAAAJ>

## Open Source Software

1. Price, N., Chizinski, C., & Burnett, J. (2019). *Radsets - An R Package for creating Radial Sets diagrams*. <https://natbprice.github.io/radsets/>
2. Price, N., & Burnett, J. (2019). *Tvdifff - An R Package for performing total variation regularized differentiation*. <https://github.com/natbprice/tvdifff>
3. Price, N., & Chizinski, C. J. (2019). *Huntfishapp - A web-based, exploratory data analysis application for hunting, fishing, and outdoor recreation sales data*. <https://chrishchizinski.github.io/huntfishapp/>

## Select Publications

1. Price, N. B., Chizinski, C. J., Fontaine, J. J., Pope, K. L., Rahe, M., & Rawlinson, J. (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>
2. Hinrichs, M. P., Price, N. B., Gruntorad, M. P., Pope, K. L., Fontaine, J. J., & Chizinski, C. J. (2020). Understanding Sportsperson Retention and Reactivation Through License Purchasing Behavior. *Wildlife Society Bulletin*, 44(2), 383–390. <https://doi.org/https://doi.org/10.1002/wsb.1088>
3. Balesdent, M., Brevault, L., Price, N. B., Defoort, S., Le Riche, R., Kim, N.-H., Haftka, R. T., & Bérend, N. (2016). Advanced Space Vehicle Design Taking into Account Multidisciplinary Couplings and Mixed Epistemic/Aleatory Uncertainties. In G. Fasano & J. D. Pintér (Eds.), *Space Engineering: Modeling and Optimization with Case Studies* (pp. 1–48). 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)
4. Chaudhuri, A., Waycaster, G., Price, N., Matsumura, T., & Haftka, R. T. (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> doi: 10.2514/1.1010269