

Nathaniel Price

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Education

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

Experience

May 2020 - present	Senior Data Scientist Golden, Colorado, US <ul style="list-style-type: none">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 dataRapidly researched, prototyped, and deployed machine learning algorithms for energy disaggregation and electric vehicle charging detectionEstablished monthly, cross-team Data Science Knowledge Share meetings to promote collaboration and discuss topics such as scaling knowledge, Azure DevOps, and coding best practices	ICF
Oct 2019 - May 2020	Data Scientist Golden, Colorado, US	ICF
Sep 2016 - Oct 2019	Data Scientist Lincoln, Nebraska, US <ul style="list-style-type: none">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 sportspersonsMentored graduate students and facilitated data science research resulting students publishing multiple journal publications, international conference presentations, and a book chapter	University of Nebraska-Lincoln
Oct 2014 - Mar 2016	Ph.D. Student Researcher Palaiseau, Île-de-France, France <ul style="list-style-type: none">As part of international joint-PhD collaboration between 2 universities (UF, EMSE) and ONERA research lab, developed a novel method for optimal design under uncertainty that incorporated risk of future redesign into design optimizationCo-authored book chapter on advanced space vehicle design under uncertainty	ONERA - The French Aerospace Lab
Aug 2012 - Jul 2016	Graduate Research Assistant Gainesville, Florida, US <ul style="list-style-type: none">Integrated machine learning (e.g., Gaussian process) and optimization to design engineering systems considering uncertainty in future decision making processCollaboratively developed optimization-based solution to The NASA Langley Multidisciplinary Uncertainty Quantification Challenge (2014)	University of Florida
Sep 2011 - Aug 2012	Undergraduate Research Assistant Gainesville, Florida, US <ul style="list-style-type: none">Created parameterized Python finite-element model to understand interactions of patient variability and design changes on safety of Biomet rigid sternal fixation deviceAwarded Biomedical Engineering Society (BMES) Design and Research Award and Knox T. Millsaps Outstanding Undergraduate Paper Award	University of Florida

- 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

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). *Tvdiffr - An R Package for performing total variation regularized differentiation*. <https://github.com/natbprice/tvdiffr>
3. Price, N., & Chizinski, C. J. (2019). *Huntfishapp - A web-based, exploratory data analysis application for hunting, fishing, and outdoor recreation sales data*. <https://chrischizinski.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/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
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