

Matthew Grimes

CONTACT INFORMATION

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ANALYTIC EXPERIENCE

The Hartford

Data Scientist 2019 - present

- Technical lead for the Competitive Intelligence Engine. The CI Engine is an analytical tool for assisting product managers in identifying pricing opportunities in the marketplace by modeling and explaining the driving forces behind competitiveness.
- Implemented a data pipeline in python and spark using object-oriented principles resulting in validated data preparation and reusable code.
- Guide the team in the use of Shap values to interpret models and translate results into actionable business recommendations.

Associate Data Scientist

2018 - 2019

- Develop auto GLM loss model in H2O along with accompanying diagnostic charts, metrics, and ultimate factors for filing with Department of Insurance.
- Conduct exploratory data cleaning analysis to assess potential data sources for inclusion in loss models resulting in recommendations shared with the business.
- Design, prototype, test, and produce python interfaces for H2O enabling standardization and iteration of business-specific use-cases.
- Lead team training sessions introducing best practices with tools like git and python.
- Engineered a data pipeline framework in pyspark, producing reusable data processing tools for multiple lines of business.
- Led a proof of concept Agile team as Product Owner, producing analyses of potential data sources for internal and external business partners.
- Ported extensive H2O modeling and data cleaning codebase from R to python, introducing object-oriented principles resulting in modular, maintainable, and understandable code for producing exploratory loss models.

Boston College

Visiting Assistant Professor of Mathematics

2016 - 2018

- Taught six mathematics courses of approximately thirty students ranging from calculus to abstract algebra.
- Conducted mathematical research resulting in a collaborative publication.
- Communicated research findings in invited lectures at seminars and conferences.

University of Colorado Boulder

Mathematics Instructor

2011-2016

- Taught ten mathematics courses of approximately thirty students ranging from broad survey courses to advanced calculus.

LEADERSHIP EXPERIENCE

- As technical lead for the Competitive Intelligence Engine, provide thought leadership and take ownership of the overall technical quality, from Tableau front-ends to data pipeline streamling on the backend.
- Managed two data science graduate student interns during the summer of 2019, resulting in both receiving and accepting full-time offers.
- Provide thought leadership on organizing codebases, training in git, as well as coding best practices though informal consultations and departmental presentations.
- Co-organized data science “book club,” targeting technical growth in a collaborative

- environment.
- Co-organized Data Science Quarterly Meeting at The Hartford, Spring 2019. Developed an agenda and organized speakers for five-hour conference with more than one hundred attendees.

EDUCATION	Ph.D., Mathematics	2016
	M.A., Mathematics	2012
	University of Colorado, Boulder, Colorado USA	
	B.S., Mathematics	2010
	Arizona State University, Tempe, Arizona USA	

SKILLS **Linux, Python, Git, AWS, Hadoop, H2O, Spark, Pandas, SQL,** and **C/C++**.
 Example projects in C++ and Python at <http://www.github.com/matthewgrimes>.

SELECTED PROJECTS **Competitive Intelligence Engine**
 As part of an Agile team, assemble novel datasets from existing internal data and external pricing data to develop models of competitiveness. Analyze the driving factors in the models' predictions to provide insight into market segments ideal for pricing action. Consolidate and present recommended actions, along with projected outcomes, to business partners through a Tableau dashboard.

Standard Modeling Template

As part of an Agile team, plan, organize, produce, support, and maintain a suite of python libraries and organizational tools for class plan development. The scope of the project encompasses raw data intake using a spark data pipeline through delivering final factors to business partners. Collaborations take the form of ideation, peer review, testing, and pair programming.

Hexgame

Used open-source libraries like SDL, assimp, and CEGUI to code a fully 3D strategy game. The project involved mesh modelling and animation, designing rendering pipelines, developing adversarial AI, and building a clean and informative user interface.

SELECTED PUBLICATIONS AND INVITED SPEAKING Maksym Fedorchuk and Matthew Grimes, *A VGIT Presentation of the Second Flip of $\overline{M}_{2,1}$* , to appear in Michigan Math Journal.
 – Findings presented at the Tufts University *Algebra, Geometry, and Number Theory Seminar* in October 2017.

Matthew Grimes, *Compactifications of Universal Moduli Spaces of Vector Bundles and the Log-Minimal Model Program on \overline{M}_g* . International Mathematics Research Notices (2018).

- Findings presented at the University of Georgia in the *American Mathematical Society Southeast Sectional* in March 2016
- Findings presented at Harvard University in the *Harvard/MIT Algebraic Geometry Seminar* in February 2015