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Skills

Languages
- Python
- Scala

Database/Analysis
- SQL
- AWQL
- SAS
- Spark/PySpark
- Pandas
- NumPy
- Teradata

Data Visualization
- PyPlot
- Mathematica

Development
- HTML5
- CSS3

Software
- Office Suite
- LaTex
- ArcGIS

Mary Clair Thompson, Ph.D.
Mathematician and Programmer

About me I'm a mathematician with a love for creative problem solving. I'm also a self-taught programmer with an ability to learn quickly and independently. My technical interests include mathematical modeling, data analysis, software development, and graphics creation and manipulation; I would like to put all of these skills to use in a data science position.

Experience

2013 - present, Overstock.com
Data Scientist Intern. Instrumental in analysis and software development for large-scale project to automate both interactions with AdWords web services and paid keywords bidding.

2013 - present, Lafayette College
Visiting Assistant Professor of Mathematics. Taught and administered three courses per semester, including Calculus I-III and Linear Algebra; led and participated in multiple research projects in algebra and data analysis; used Python to generate and analyze large quantities of data.

2007 - 2013, Auburn University
Graduate Teaching Assistant. Taught and administered two courses per semester; conducted independent mathematics research culminating in dissertation "Asymptotic Results in Noncompact Semisimple Lie Groups."

2007, NVision Solutions
Summer Intern. Developed GIS software solutions in ArcGIS, including interactive maps for inland ports.

Education

2010 - 2013, Auburn University
Ph.D. in Mathematics

2007 - 2010, Auburn University
M.S. in Mathematics

2004 - 2007, Delta State University
B.S. in Mathematics, minor in Computer Information Systems

Projects

AdWords Automation
Used SQL to combine Overstock database tables with similar tables from competitors; analyzed tables and used data to build out AdWords bidding and url automation software. Interacted with AdWords client through AWQL and Suds/Soap logging. Wrote Python scripts with embedded AWQL to automate ad maintenance and downloading and analysis of performance data.

Determinant Analysis

PI on project to answer a question on determinants of certain types of matrix sums. Used Python to generate hundreds of thousands of large random matrices and calculate determinants. Project involved statistical analysis on the data using Pandas and NumPy and data visualization using PyPlot.

Awards

Association for Women in Mathematics Travel Grant for Women Researchers

Wrote successful grant application for $2500 to fund travel to Shanghai, China for research and presentation.

Haynesworth Fellowship, Auburn University

Presented to outstanding graduate student in mathematics.

COSAM Dean's Research Award, Auburn University

Presented to the top Master's Theses in the College of Science and Mathematics.

First Diploma, Delta State University

Awarded to the graduating senior with the highest GPA.

Selected Publications

Rutishauser's LR algorithm and Bruhat Iteration

Linear and Multilinear Algebra 63 (2015), 2061-2070.

Determinants of Sums of Two Real Matrices

Linear and Multilinear Algebra 60 (2013), Ky Fan Special Issue, 1409-1431.

Determinant and Pfaffian of Sum of Skew Symmetric Matrices

Linear Algebra and its Applications 433 (2010), 412-423.