

Christian C. Testa

PROGRAMMER · MATHEMATICIAN · DATA SCIENTIST

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Education

Tufts University

BACHELOR OF SCIENCE DEGREE AWARDED IN MATHEMATICS

Fall 2013 - Spring 2017

- My thesis on Elliptic Curves was awarded High Thesis Honors. In my thesis, I used SageMath and Python's Matplotlib libraries to visualize the subtle and deep mathematics of elliptic curves.
- My relevant coursework includes Data Analysis, High Performance Computing, Nonlinear Dynamics and Chaos, The Mathematics of Wealth, Poverty and Inequality, Web Engineering, and more.

Experience

Tufts' Office of Institutional Research and Evaluation

RESEARCH ASSISTANT

September 2013 - Present

- I developed an open source package in R and a Shiny web application called QualtricsTools which automates processing Qualtrics surveys into reports. The package and its documentation are available online at <https://github.com/ctesta01/QualtricsTools>.
- I built a JavaScript library for adding additional survey answer validation into the Qualtrics survey user interface which can perform and validate Excel like formulas in real time for the user as they submit their responses.
- I wrote code in Python, R, Microsoft Visual Basic, JavaScript, and IBM SPSS Statistics and used Git for all my projects.

Journal of Medical Insight

TECHNOLOGY PARTNER

Summer and Fall 2015

- I automated a web server setup comprised of Django, PostgreSQL, Redis, and Nginx using Docker.
- I wrote PHP, Bash, Python, and SQL to build upon and maintain the company's website jomi.com.

HostGator.com

JUNIOR ADMINISTRATOR

Summers of 2013, 2014

- I worked in customer support solving customers' problems such as web, database, and email server configurations, domain name service configuration, and general account management. I worked extensively and daily with Linux, Bash, cPanel, WHM, PHP, Apache, WordPress, Drupal, and more.

Programming and Skills

- **R.** I have been writing web applications, scripts, and packages in R. I am familiar with popular packages such as Shiny, testthat, Roxygen2, dplyr, the tidyverse (including tidyR, dplyr, ggplot2, etc.), formatR, knitr, and more.
- **Matlab.** I have used Matlab in coursework for classes such as Data Analysis, High Performance Computing, Numerical Linear Algebra. Matlab is one of my go-to languages to solve optimization problems and prototype numerical algorithms.
- **Python.** I have worked professionally with Python's web frameworks Django and Flask, as well as the Python-based and mathematics-oriented programming language SageMath for my thesis. I regularly use packages such as Numpy, Pandas, Matplotlib, and others.
- **HTML, CSS, JavaScript and SQL.** In taking courses such as Web Development and Web Engineering and by working at HostGator, the Journal of Medical Insight, and Tufts' Office of Institutional Research and Evaluation, I have spent the last 5 years regularly writing HTML, CSS, JavaScript and SQL. Beyond these vanilla languages, I am comfortable with HTML5, SCSS and SASS, JavaScript frameworks such as Node.js, and database servers such as PostgreSQL, MongoDB, and SQLite.
- **Microsoft Office.** At the Office of Institutional Research and Evaluation we regularly create statistical reports rendered from Microsoft Word and Excel. These often are created using complex Visual Basic macros, very subtle, detailed, and precise formatting, and using data which must diligently be verified to be accurate. I am not just a Microsoft Office power user, but one with a keen attention to detail as well.

Activities

BALLROOM DANCE

I competitively dance the International Standard ballroom style, including the Waltz, Tango, Foxtrot, Viennese Waltz, and Quickstep. The mental and physical exercise of creating speed, rotation, and sway with my partner to express the music we dance to is one of my greatest delights.

PHOTOGRAPHY

When I was a little kid I fell in love with nature as I tagged along with my grandmother who was leading camping trips to sites of geological interest with her graduate students. Now, I try to spend as much time as I can appreciating nature, and as a result I find nature photography is an activity I come back to time and time again.