# Christopher David Armstrong

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Data Analyst with 5+ years of data and applied mathematics experience. Demonstrated ability to perform data analysis and produce meaningful results. Strong requirements assessment, statistical, systems design, quantitative, and analytical skills.

Core Competencies (4+ years each): Excel, Python, R, SQL, CSS, HTML, JavaScript, jQuery

## Experience

**Research Associate (Applied Mathematics)** *May 2019 – Present*
*The University of Pennsylvania – Philadelphia, PA*
- Assist the Gregory lab with quantitative modeling of RNA experiment data.

**Graduate Teaching Assistant** *May 2019 – August 2019*
*The Georgia Institute of Technology – Atlanta, GA*
- Explained mathematical concepts to students in a course on simulation. Developed exercises to test students' mathematical reasoning abilities.

**Developer and Data Analyst** *September 2014 – January 2018*
*Veridis Consulting – Washington, DC*
- Developed proprietary solutions for government and private clients. Notable projects include implementing data pipeline quality control systems for a department of the DC government and process automation for a political analytics consulting firm.

**Mathematics Teacher** *October 2013 – October 2016*
*Revolution Prep – Washington, DC*
- Prepared high school students for the SAT and ACT by teaching courses and developing mathematics curricula. Improved test-taking performance by using statistical system to support student learning plans. All students improved at least 200 points and 3 points for the SAT and ACT respectively.

**Data Analyst and Mathematics Teacher (Term)** *March 2014 – August 2014*
*The University of the District of Columbia – Washington, DC*
- Created data system to track and improve student test performance at an adult education center. Designed observational study and curriculum for mathematics workshops. Hired and managed an intern statistician tasked with developing quantitative methods to improve curriculum. Produced 56-page report describing findings of observational study and curricular efforts.

## Education

**M.S., Analytics (Quantitative Modeling Track)**
*The Georgia Institute of Technology – Atlanta, GA*
- Relevant Coursework: Regression Analysis; Simulation; Time Series Analysis; Bayesian Statistics; Deterministic (Convex) Optimization; Data Visualization

**B.S., Mechanical Engineering (Thermodynamics Track)**
*The University of Kansas – Lawrence, KS*
- Relevant Coursework: Statistics I; Computational Numerical Analysis; Differential Equations; Engineering Calculus I, II; The Finite Element Method for Stress Analysis; Linear Algebra

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## Quantitative Portfolio

## Selected Programming Projects

**Batch Processer and Visualization Interface (in progress)**
Format: Scripts and Web Application
Languages: CSS, HTML, JavaScript, jQuery, Python, R, Shiny; (2000+ lines)
Description: Developed a visualization tool which displays prediction error for machine learning algorithms.

**WMATA Congestion Tracker (in progress)**
Format: Web Application
Languages: Python, R, Shiny, SQL; (600+ lines)
Description: Creating a web tool to visualize public transit reliability, congestion, and usability.

**Zillow Price Prediction Machine Learning Visualization**
Format: Web Application
Languages: CSS, HTML, JavaScript, jQuery, D3; (1000+ lines)
Description: Developed a visualization tool which displays prediction error for machine learning algorithms.

**Data Ingestion Process Automation**
Format: Scripts
Languages: Python, SQL; (1500+ lines)
Description: Created custom scripts to automate a data ingestion process.

**Tax Return Database Interface**
Format: Web Application
Languages: CSS, HTML, JavaScript, jQuery, Python, SQL; (3000+ lines)
Description: Developed a database interface for a human resources firm.

## Selected Papers and Reports

Armstrong, Chris. *Modeling the RNAs (Applied Mathematics)* (in review). Article. Philadelphia, Pennsylvania: Gregory Lab at The University of Pennsylvania.

Armstrong, Chris. *A Study of Superpositions of Periodic Functions (Pure Mathematics - Real Analysis)* (in progress). Article.

Armstrong, Chris. *Project Treatment for the Study of Power Systems.* Article. Washington, District of Columbia: Self-Published. 2018. 8 pages.

Armstrong, Chris, and Matthew Hiesiger. *Statistical Analysis of Assessment Scores at the Marion Shadd Workforce Development Site*. Report. Washington, DC: Self-Published, 2014. Print. 56 pages.

Armstrong, Chris, and Max Ward. *Modeling and Optimization of a 4-Stroke Engine Using Excel*. Technical Paper. Lawrence, Kansas: University of Kansas, 2009. Excel Media. 5 pages.