

# Andrew Clark

Richmond, VA  
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## Experience

Principal, Machine Learning Audit  
Capital One Financial Corporation

September 2017 – present  
Richmond, VA

- > Build machine learning and continuous auditing applications to reinvent the audit process utilizing Python, SQL and AWS.
- > Establish approaches for auditing and validating machine learning algorithms leveraging OCC 2011-12 and existing guidance along with original research
- > Create and present trainings on machine learning
- > Perform machine learning algorithm audits

IT Auditor / Data Scientist  
Astec Industries, Inc.

May 2015 – September 2017  
Chattanooga, TN

- > Designed and built a continuous auditing infrastructure over Astec's numerous global subsidiaries using SQL and Python.
- > Developed custom analytic scripts for corruption/compliance and anomalous journal entry testing using SQL, Python, pandas, and scikit-learn.
- > Researched the application of statistical and machine learning methods for use in the auditing domain. An example of which is the development and deployment of an unsupervised clustering algorithm across the full population of journal entries.
- > Conducted security audits across Astec Industries' subsidiaries focusing on SQL Server, Windows Server, and Active Directory best practices.
- > Created cybersecurity audit framework targeting company and industry-specific risks based off of NIST's Cybersecurity framework and the Center for Internet Security's Critical Security Controls.

Internal Audit Intern  
Astec Industries, Inc.

August 2014 – May 2015  
Chattanooga, TN

- > Began implementing a fraud analytics program with ODBC connections to subsidiary databases; and performed SOX and financial audits.

## Certifications

- > Certified Analytics Professional - INFORMS - February 1, 2018
- > Certified Graduate Statistician - ASA - January 5, 2018 - December 31, 2025
- > AWS Certified Solutions Architect - Associate - April 2, 2018 - April 2, 2020

## Education

University of Reading  
*PhD in Economics*

September 2018 - May 2022 expected

- > Proposed dissertation: "International Reserve Currency Shifts: a historical, data driven approach."

Southern Methodist University

August 2017

*Master of Science in Data Science*

- > Coursework in statistics, machine learning, databases, and visualization utilizing Python, SQL, R, and SAS.

University of Tennessee at Chattanooga

May 2015

*Bachelor of Science in Business Administration with a concentration in Accounting*

- > Summa Cum Laude
- > Course work in Intermediate Microeconomics and Macroeconomics

Beta Alpha Psi, Beta Gamma Sigma

## Publications and Presentations - Highlights

*The Machine Learning Audit - CRISP-DM Framework*

ISACA Journal, Volume 1, 2018

*Keynote: The Machine Learning Audit*

December 1, MIS Training Institute ITAC 2017