PAUL HORTON

✉ phorton9@gatech.edu | 📞 US Mobile: +1 205-401-1166 | 🏠 1816 Avon Ave SW, Atlanta, GA 30311

EDUCATION

GEORGIA TECH — Atlanta, GA
PhD in Machine Learning advised by Dr. Yajun Mei and Dr. David Goldsman — 2022-2026 (Expected)

GEORGIA TECH — Atlanta, GA
Master of Analytics with Analytical Tools Concentration — 2020-2021

UNIVERSITY OF SOUTH CAROLINA — Columbia, SC
Master of Business Administration with Business Analytics Concentration — 2016-2018

AUBURN UNIVERSITY — Auburn, AL
Bachelor of Chemical Engineering. Business Minor. Honors College. Engineering Honor Society. — 2007-2011

PUBLICATIONS

- **P. Horton**, V. Patel, C.L. Hall, K. Johnston, Y. Mei, and O. Sadan, "Exploring the correlation between corrective glucose treatment and long-term patient outcomes: a SHINE secondary analysis." *Frontiers in Neurology* 16 (2025): 1567766.
- **P. Horton**, A. Florea, and B. Stringfield, Conformal Validation: A Deferral Policy Using Uncertainty Quantification with a Human-in-the-Loop for Model Validation, *Machine Learning with Applications* (2025): 100733.
- **P. Horton**, and Y. Mei, Pragmatic two-stage design for clinical trials with treatment selection, Submitted to Statistics in Medicine with first round revisions submitted June 2025.
- **P. Horton**, Q. Xu, and Y. Mei, The Kiefer-Weiss-Lorden-Lai Framework for Sequential Evaluation of Efficacy and Futility with Application to Correlation Study, Submitted to Statistics in Biosciences with first round revisions June 2025.
- **P. Horton**, and Y. Mei, Efficient Two-Dimensional Error Allocation for Correlation Testing, Submitted to Journal of Applied Statistics July 2025.
- **P. Horton,** Y. Mei, and O. Sadan, Changes in serum sodium during an external ventricular drain weaning in patients with subarachnoid hemorrhage – a single center retrospective analysis, Submission to NeuroCrit Care Conference Sept 2025
- **P. Horton**, J. Bahktiar, D. Goldsman, Panel selection of imperfect references for the evaluation of diagnostic tests, Expected submission in March 2026.
- **P. Horton,** and Y. Mei, Non-rectangular Hypothesis Test for Sensitivity and Specificity, Expected submission in May 2026.
- **P. Horton,** B. Stringfield, and Y. Mei, Uncertainty Measure for Detecting Distribution Shifts in Supervised AI Models, Expected submission in June 2026.

TEACHING EXPERIENCE
Atlanta, GA
Graduate Student Instructor (May 2025 – August 2025) — 2025 – 2025
Taught course ISYE3025 – Engineering Economics for two sessions with both an online and in-person version.

Head Teaching Assistant (August 2021 – Present) — 2021 – Present
Lead group of 5 teaching assistants for ISYE7406 – Data Mining and Statistical Learning. Graded homework and exams. Held office hours to help students and answered concept questions on an online forum. Instructor of record is Dr. Xiaoming Huo.

RESEARCH EXPERIENCE
GEORGIA TECH RESEARCH INSTITUTE — Atlanta, GA
Graduate Research Assistant (May 2023 – Present) — 2023 – Present
Researched methods to quantify uncertainty to defer most uncertain observations in human-AI team. Received funding for project to detect a distribution shift in data distribution using uncertainty measure from model output.

WORK EXPERIENCE
MUELLER WATER PRODUCTS — Atlanta, GA
Sales and Forecasting Analyst (May 2021 – Aug 2022) — 2021 – 2022
Researched and analyzed relevant external factors for predicting orders. Identified and fixed data integrity issues. Built Tableau sales reports. Consulted on pricing strategy identifying opportunities for alignment.
- Cross-validated models and implemented Lasso forecasting model which reduced error rate by 20% over previous method.
- Developed data pipeline and automated steps in forecasting process saving sales team 40 hours per month.

WEYERHAEUSER — Seattle, WA
Sales and Marketing Analyst (July 2019 – July 2020) — 2018 – 2020
Evaluated market opportunities for treated building product segment by researching demand generation and quantifying market size. Analyzed trends, competitor performance and demand growth for enhanced building product segment.
- Automated data pipeline and report generation in Power BI saving 150 hours of processing per year.
- Integrated and cleaned data from multiple third-party sources to deliver report savings of $50,000.

ARIVALE
Business Analyst (June 2018 – May 2019)
Performed statistical analysis to evaluate accuracy of biometric testing method using regression analysis. Designed data visualization reports in Power BI and wrote SQL queries for ad-hoc analysis for managing supplier performance.
- Built exception reporting tool to reduce non-conformities through increased visibility and accountability from 5% to 4%.
- Reduced average turnaround time from 9 to 5 days by establishing more robust shipping processes.

MICHELIN   Lexington, SC
Product Development Engineer (July 2015 – June 2018)   2011 – 2018
Defined and accountable for product models which surpassed targets for manufacturing performance metrics. Provided leadership role and technical support on multiple cross-functional continuous improvement teams.
- Achieved the best quality results at 90% Right-First-Time rate compared to 76% plant average.
- Led project which reduced defect rate by 8% through process improvements saving 300 hours of repairs per year.

Process Engineer (Sept 2011 - July 2015)
Analyzed manufacturing process data and defined parameters to achieve operations KPI. Led strategic planning for $5 million capex prototype project through qualification. Defined machine capability and planned schedule to optimize efficiency.
- Initiated process management for parameter standardization which improved production by 10%.
- Improved inventory management through optimized machine loading which reduced downtime by 8%.

POSTERS AND INVITED PRESENTATIONS
- US Test and Evaluation Threat Resource Activity (TETRA) AI Community Collaboration Board 2025. "Conformal Validation: A Deferral Policy Using Uncertainty Quantification with a Human-in-the-Loop for Model Validation"
- Systems Engineering Research Center - AI4SE & SE4AI Research and Application Workshop 2023. "Conformal Prediction for Testing and Evaluation of Intelligent/ML Systems"
- Emerging Data Science Methods for Complex Biomedical and Cyber Data 2023 (Poster). "Correlation between patient response to corrective glucose treatment and long-term outcome: a SHINE secondary analysis"
- Southeast Regional Clinical and Translational Science Conference 2024 (Poster). "APE: Allocation of Pre-specified Error for Sample Size Correlation Calculation with Heterogeneous Populations"
- International Workshop on Sequential Methods 2024. "Efficient Two-Dimensional Error Allocation for Correlation Testing"
- Georgia State University Conference for Biostatistics and Bioinformatics 2024 (Poster). "Efficient Two-Dimensional Error Allocation for Correlation Testing"

HONORS AND AWARDS
- George Fellowship (Georgia Tech ISyE 2025)
- Graduate Teaching Fellowship (Georgia Tech Center for Teaching and Learning 2024-2026)
- Best Poster Award (Georgia State University Conference for Biostatistics and Bioinformatics 2024)
- Georgia CTSA Travel Award (Southeast Regional Clinical and Translational Science Conference 2024)
- Augusta University Travel Award (Emerging Data Science Methods for Complex Biomedical and Cyber Data 2023)
- John Morris Fellowship (Georgia Tech ISyE 2023)
- 2021 University of South Carolina Big Data in Health Science Competition (1st Place)

CERTIFICATION
- Tech to Teaching Certification from Georgia Tech Center for Teaching and Learning.
- Center for the Integration of Research, Teaching, and Learning – Associate.
- Lean Six Sigma Green Belt for continuous improvement.
- Microsoft Certifications – Data Visualization in Power BI, Azure Fundamentals.
- Toastmasters – Competent Communicator and Competent Leader.
- French Intermediate course B1-B2 by École Polytechnique.