

JOHN H. SCHWENCK

jschwenck12@gmail.com
johnschwenck.github.io

973.610.8220



LinkedIn

EDUCATION

Texas A&M University

The College of Science / Master of Science; **Statistics** – Computational Statistics Track

*** Graduate Teaching Assistant (TA) – Principles of Data Science Using Python (Spring 2020 – Spring 2021)

College Station, TX

Class of 2021

The Pennsylvania State University

The College of Liberal Arts / Bachelor of Science; **Economics**

Smeal College of Business / Bachelor of Science; **Supply Chain & Information Systems**

University Park, PA

Class of 2016

WORK EXPERIENCE

Wells Fargo Bank, N.A.

Quantitative Analyst / Artificial Intelligence & Machine Learning Center of Excellence (CoE)

Charlotte, NC

July 2021 – Present

- Develop and deploy modern AI & ML models for various business units using big data frameworks for scalability
- Research and translate the latest statistical and computational methodologies from academic literature into production

Texas A&M Athletics

Statistical Consultant / Sports Science and Analytics

College Station, TX

June 2020 – May 2021

- Utilize high resolution spatio-temporal data from athletes across all Division 1 athletic programs to improve both strategic and within-game decision making using RFID / GPS tracking and computer vision
- Incorporate real-time physiological data from Oura rings and other wearable devices of athletes for functional data regression to estimate various performance metrics
- Translate machine learning algorithms into Power BI dashboards to assist athletes with diet and training performance
- Strategically utilized Men's Basketball COVID-19 gameplay and practice contact tracing data in order to minimize player absence during regular and post-season play by preventing safety protocol violations and avoiding SEC sanctions

Halliburton (Cancelled due to COVID-19)

Research and Development Intern / Machine Learning for Upstream Drilling

Houston, TX

Summer 2020

South Jersey Industries

Senior Analyst / Strategic Analytics & Corporate Development

Atlantic City, NJ

June 2016 – April 2019

- Utilized geospatial data and developed a machine learning model in R to generate pipeline failure probabilities at various locations for gas leak prevention and other potentially fatal situations
- Leveraged R, Python, and SQL to create a company-wide data visualization dashboard in Power BI that integrated departmental performance metrics to drive accountability and transparency in data reporting
- Improved the Trading teams' asset portfolios by developing a logistic regression model using R and SQL to predict the likelihood of their natural gas trade volumes receiving a "supply cut" during the pipeline nomination process
- Optimized call center volume by developing a queuing network for call arrival times and a Spatial Poisson Process model to predict the most probable call locations for the economic dispatch of response workers

RESEARCH EXPERIENCE

Academic Research

Texas A&M - Department of Statistics

Graduate Researcher

College Station, TX

May 2020 - Present

- Conduct research with departmental faculty and collaborative researchers at Johns Hopkins University to develop algorithms through the **iglu** R package that detect abnormal rates of change in continuous glucose monitors (cgm) using a variety of machine learning techniques, data visualization, and medical analysis measures
- Creator and author of, **bp**, the first open source R package dedicated to measuring and analyzing blood pressure data through a suite of data-processing tools and prognostic metrics from relevant literature
- Methodological research currently involves functional data analysis (multilevel fPCA) to analyze sleep duration curves

Applied Cognitive Ergonomics (ACE) Lab
Lead Statistician

College Station, TX
September 2019 – September 2020

- The multi-disciplinary research lab focuses on telehealth, workplace safety, and biomedical monitoring.
- Consulted and oversaw statistical modeling in experimental design for accuracy and legitimacy before publication

Penn State Energy Marketing Association (P.S.E.M.A.)
Founder / Director of Macroeconomic Research

University Park, PA
July 2015 – May 2016

- Established the organization to bridge the gap between technical and non-technical backgrounds who shared a mutual interest for the energy industry and a desire to further their knowledge through cross-disciplinary research
- Directed all research efforts for monthly market outlook newsletters by conducting statistical analyses for each of the four core focus areas (Oil, Gas, Weather, and Economy) and implemented various computational algorithms via R
- Prepared weekly educational presentations for both physical and economic / financial aspects of the energy supply chain

Independent Research

Riding for Research – A Cycling Trip Across North America
Project Manager / Cyclist

United States & Canada
April 2019 – April 2020

- Pedaled a 1991 Cannondale M1000 bicycle 6,000 miles from New York City to Seward, Alaska to collect fitness, dietary, and cardiac related data through various health tracking sensors for an initial pilot study
- Analyzed biomedical signals (both covert biomarker signals such as heart rate, blood pressure and sleep, as well as overt signals such as meal and stress logs) to assess the impacts of exercise, stress, sleep, and nutrition
- Collected data hosted on Harvard Dataverse and blood pressure data available in the R package, *bp*

CONFERENCES & PRESENTATIONS

- R/Medicine Conference, R Consortium – Poster Presenter
bp: Blood Pressure Analysis in R **Virtual** (due to COVID-19)
August 2021

PUBLICATIONS & SOFTWARE DEVELOPMENT

All code and packages available via GitHub at <https://github.com/johnschwenck>

- *bp: Blood pressure analysis in R* | Available on GitHub and CRAN
Authors (CRAN version 2.0.0): **Schwenck J.**, Gaynanova I.
- *iglu: Interpreting Glucose Data from Continuous Glucose Monitors (CGM) in R*
Authors (CRAN version 3.0.0): Broll S., Shih J., **Schwenck J.**, Hicban M., Buchanan D., Martin M., Chun E., Patel P., Muschelli J., Fernandes N., Urbanek J., Seo J., Meyyappan A., Nguyen N. and Gaynanova I.
- *Riding for Research: Cycling Pilot Study from NYC to Alaska (2019)*. **Schwenck J.**, Harvard Dataverse,

SKILLS & INTERESTS

Programming: R, Python, SQL, Git/GitHub, VBA, C/C++

Data Science & Big Data: Jupyter, Spark, Hadoop, H2O, Jira

Software: Excel, Power BI, LaTeX, Bloomberg, SharePoint

Research Interests: Functional data analysis, NLP, quantile methods, dimension reduction, spatio-temporal methods

Non-academic Interests: Cycling, skiing, reading, chess, history, saxophone, poker, NY Giants