JOHN H. SCHWENCK

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EDUCATION

Texas A&M University — **College Station, TX**
The College of Science | Master of Science; ***Statistics*** *– Computational Statistics Track* — *Class of 2021*
**** Graduate Teaching Assistant (TA) – Principles of Data Science Using Python (Spring & Fall 2020)*

The Pennsylvania State University — **University Park, PA**
The College of Liberal Arts | Bachelor of Science; ***Economics*** — *Class of 2016*
Smeal College of Business | Bachelor of Science; ***Supply Chain & Information Systems***

WORK EXPERIENCE

Texas A&M Athletics — **College Station, TX**
Statistical Consultant | Sports Science and Analytics — *June 2020 – Present*

- 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 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

Halliburton (Cancelled due to COVID-19) — **Houston, TX**
Research and Development Intern | Machine Learning for Upstream Drilling — *Summer 2020*

South Jersey Industries — **Atlantic City, NJ**
Senior Analyst | Strategic Analytics & Corporate Development — *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
- Automated manual entry of over 10,000 historical solar outage reports using VBA and implemented an NLP text classifier in Python for improved efficiency
- 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

Aggie Research Program — **College Station, TX**
Graduate Researcher — *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) and assess the excessive variation of sleep duration curves using functional data analysis (fda)
- Lead all research efforts directed at developing a separate R package for ambulatory blood pressure monitoring (abpm) that investigate the interplay between diet and activity on blood pressure levels

Applied Cognitive Ergonomics (ACE) Lab — **College Station, TX**
Lead Statistician — *September 2019 – Present*

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

Penn State Energy Marketing Association (P.S.E.M.A.) **University Park, PA**
Founder | Director of Macroeconomic Research *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 **United States & Canada**

- 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
- Study divided into 3 phases, consisting of exercise, diet control, and stress management, to assess trends in cardiac performance as measured through blood pressure, heart rate variability, and other health indicators
- Currently developing a mobile application that will allow for replication and representative data collection

PUBLICATIONS & SOFTWARE DEVELOPMENT

- Broll S., Urbanek J., Buchanan D., Chun E., Muschelli J., **Schwenck J.,** Martin M., Patel P., Hicban M., Nguyen N. and Gaynanova, I. (2020) *"iglu: Interpreting Glucose Data from Continuous Glucose Monitors"* R package version 2.0.0
- **Schwenck J.** (2020) *Riding for Research: Cycling Pilot Study from NYC to Alaska,* Harvard Dataverse, https://dataverse.harvard.edu/dataverse/r4r
- All code and packages available via GitHub at https://github.com/johnschwenck

SKILLS & INTERESTS

Programming: R, Python, SQL, VBA, Git/GitHub, C/C++
Software: Excel, Power BI, LaTeX, Bloomberg, SharePoint
Research Interests: Bayesian machine learning, natural language processing, network models, spatio-temporal methods
Non-academic Interests: Cycling, skiing, reading, chess, history, saxophone, poker, NY Giants