DR. JOHN CORCORAN BURNS, PhD

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PROFILE:

Motivated, results-driven Computer Science PhD with expertise in machine learning, natural language processing (NLP), and statistical modeling. Proven ability to analyze complex datasets, develop predictive models, and deliver AI-driven insights using Python, R, SQL, and Spark. Eager to transition from academia to industry to tackle large-scale, real-world challenges that demand both scientific rigor and practical innovation.

WORK EXPERIENCE:

University of St Andrews – New York, NY *Dec 2020 – Present*
Data Science Researcher
- Built multilingual sentiment analysis models end-to-end, through deep learning, machine learning and AI, achieving accuracy over 90% and put them into production.
- Implemented and compared decoder-only large language models for sentiment analysis across multiple languages to attain better understanding of LLM capabilities.
- Built an NLP pipeline leveraging Hugging Face Transformers to analyze geopolitical risk using textual data.
- Constructed several agentic AI models for automatic web scraping and data analysis as well as task management.

Mayor's Office of Management and Budget - New York, NY *Dec 2016 – Nov 2018*
Data Analyst
- Conducted geospatial analyses of residential and commercial property trends, informing policy decisions.
- Built regression models to quantify the impact of homeless shelters on surrounding property values.
- Evaluated property tax revenue growth impacts from the BQX light rail project forecasting models.
- Automated data processing pipelines for quarterly property transaction analysis, enhancing decision-making efficiency.

One Main Financial – Baltimore, MD *June 2015 – Aug 2015*
Intern in FP&A and Incentives
- Designed incentive compensation models supporting 4,000+ employees, improving accuracy and engagement.
- Created daily liquidity forecasting tools, optimizing financial resource allocation.
- Presented actionable insights on customer segmentation strategies to the executive board to drive an increase in younger customer acquisition.

EDUCATION:

University of St. Andrews – St. Andrews, Scotland, UK
PhD in Computer Science *December 2024*
- *Thesis:* "Automatic Evaluation of Geopolitical Risk" using NLP, machine learning, and large language models

Master of Science with Merit: Statistics *September 2020*
- *Relevant Courses*: Data Mining, Predictive Analytics, Time Series Analysis, Multivariate Statistics

Johns Hopkins University – Baltimore, Maryland. *May 2016*
Bachelor of Science: Applied Mathematics and Statistics
Bachelor of Arts: Economics

TECHNICAL SKILLS:

Programming & Data Manipulation: Python (Advanced), R (Experienced), SQL (Experienced), Spark (Proficient), Spark ML, PySpark, Flask
Visualization Tools: Tableau (Proficient), Microsoft Power BI (Proficient), Google Looker, Excel (Advanced), ArcGIS (Experienced)
Machine Learning & AI: TensorFlow (Advanced), scikit-learn (Advanced), PyTorch (Proficient)
Databases: MySQL, PostgreSQL, MongoDB, Cassandra, Neo4j, Redis, Snowflake, BigQuery, ChromaDB, dbt
Big Data & Cloud: Hadoop, AWS, Google Cloud Platform, Microsoft Azure, Kubernetes, Docker, Airflow, Kafka
Other: Git / GitHub, Shell / Bash, SAS, STATA, React, Microsoft Office Suite, LaTeX, Bayesian Statistics, Jira