SARAH WESOLOWSKI, PHD

Relocating to England (NO sponsorship and NO relocation assistance needed) in November 2023
Currently in Philadelphia, PA, USA
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CAREER SUMMARY

Data Scientist • Scientific Programmer • Project Manager

- ***Healthcare data scientist*** with 14 years of experience of successful collaboration with clinicians, statisticians, and stakeholders from diverse backgrounds. Proficient in extracting, wrangling, and maintaining complex health data to deliver personalised patient recommendations.
- ***Skilled project manager*** who combines technical expertise with strong interpersonal skills, overseeing multiple data science projects from inception to completion while mentoring and managing junior colleagues.
- ***Expert client-facing presentation skills***, effectively communicating complex technical information to advance decision-making, evidenced by international invited presentations and work with non-academic clients.
- ***Adaptable scientific programmer*** with a proven ability to efficiently integrate into different fields and company architectures, utilising a wide range of programming infrastructures.

KEY SKILLS

- Statistical analysis and machine learning
- Customised models for individuals
- Validation of prediction models
- Biostatistics and clinical data wrangling
- Project management
- Technical presentations
- Clear presentation for non-technical audiences
- Mentoring

TECHNICAL SKILLS

- Python (scikit-learn, pandas, matplotlib, etc.), R, Jupyter, C++, SQL, MATLAB, Mathematica
- Ability to quickly learn new languages
- Cloud/virtual computing (e.g. docker, Azure, databricks)
- Version control with git
- Working with electronic medical records and health coding systems such as ICD-10
- MS Office (Word, Excel, PowerPoint, Outlook)

PROFESSIONAL EXPERIENCE

Healthcare Data Scientist, University of Pennsylvania School of Medicine

Philadelphia, Pennsylvania, USA
(February 2022 – Present)

Recruited to manage Herman Lab project portfolio and mentor junior colleagues, with focus on driving statistical methods development, publishing refereed academic articles, implementation of clinical studies, reporting deliverables to funding agencies, and guiding software development practices.

- ***Built customised, novel statistical modelling framework*** for creating interpretable, validated machine learning models to target patients for disease screening using structured electronic medical records data. Delivered quarterly reports to Patient-Centred Outcomes Research Institute (funding agency).
- ***Wrangled a variety of complex health data sources*** from two local hospital systems to identify retrospective and prospective cohorts for modelling to target patients who will benefit from disease screening.

- ***Optimised codebase for disease screening prospective study*** in collaboration with junior data manager to efficiently target patients for primary aldosteronism screening in the local health system, with weekly queries and dashboard reporting for the clinical research coordinator to enrol patients. Translated into Azure databricks pipeline.
- ***Efficiently integrated into a diverse group of clinical and statistical research staff*** from a different applied statistics area (nonlinear regression models and uncertainty quantification in physics).

Statistics Faculty, Salisbury University Department of Mathematical Sciences
Salisbury, Maryland, USA
(August 2017 – January 2022)

Recruited to perform independent research, develop and teach applied statistics and data science curriculum, mentor student research, and guide client-facing statistical analysis projects. (UK-system equivalent title: Lecturer)

- ***Published 4 applied statistics articles with international teams*** in top physics journals while managing a challenging fulltime teaching and mentoring workload. Projects focussed on computationally intensive nonlinear nuclear physics models using Bayesian methods for optimisation of model parameters and model validation.
- ***Coordinated and mentored statistical analysis team projects*** where students worked with clients such as the United States Navy and NASA to analyse processes, organisation data, and produce client reports.
- ***Developed new data science programme*** by both creating cutting-edge curriculum for upper-level courses and coordinating budget with six university departments and administrators.

Graduate Researcher, The Ohio State University Physics Department
Columbus, Ohio, USA
(July 2012 – July 2017)

- ***Published 2 applied statistics articles with international teams*** on efficient Bayesian parameter estimation framework using Markov Chain Monte Carlo to optimise nonlinear nuclear physics models and make predictions with quantifiable uncertainty.
- ***Published 2 applied statistics articles*** detailing a novel strategy to estimate systematic uncertainty, and then validate those estimates, in nonlinear nuclear physics model predictions.

Research Assistant, University of Glasgow and Saint Vincent College
Glasgow, Scotland, UK and Latrobe, Pennsylvania, USA
(January 2009 – May 2012)

- ***Co-authored 1 astrostatistics article*** based on analysis of quasar observational data from the Sloan Digital Sky Survey. Build survival analysis models to better understand quasar properties. (Saint Vincent College project)
- ***Developed Bayesian model selection algorithms*** to distinguish signal from noise in gravitational wave detector data (International Research Experience for Undergraduates student at the University of Glasgow project).

EDUCATION

PhD and MSc in Physics, The Ohio State University
Columbus, Ohio, USA
(July 2012 – July 2017)
Thesis title: “Bayesian Methods for Effective Field Theories”

BSc in Physics, Saint Vincent College
Latrobe, Pennsylvania, USA
(August 2008 – May 2012)

LANGUAGES

English (native)