Robert Hoelzle, PhD

Data Scientist

Data scientist and bioinformatician with 11 years' experience in high paced R&D environment, 6 years' experience in bioinformatics programming, and a life-long passion for problem solving. Proficient in Python, R, and Bash with many multivariate modelling and statistics techniques.

Experience

Bioinformatics Research Fellow

2016 – Present   The University of Queensland
Brisbane, Qld, AUS

- Published 4 peer-reviewed publications (+3 in review), including design of data analysis pipelines in Bash, R, and Python which integrate complex genomic, transcriptomic, and environmental datasets
- Slashed research group's processing time for genomic data by 60% through design of custom Python bioinformatic programs for DNA sequences
- Initiated and maintained consultancies with biotech industry stakeholders for microbiology solutions to soil carbon sequestration, copper bioleaching, and wastewater treatment projects
- Supervised eight research students, and mentored four research professionals, providing guidance for coding and data analysis in Bash, R, and Python

Bioprocess Engineering PhD Student

2012 – 2017   The University of Queensland
Brisbane, Qld, AUS

- Published 3 peer-reviewed articles and 1 thesis, including design of data analysis pipelines in Bash and R which integrate complex genomic, proteomic, and environmental datasets
- Discovered and published novel bioplastic production method using custom bioreactors with self-designed environmental control systems in C++

Bioprocess Engineer

2010 – 2012   Green Biologics Ltd
Columbus, Ohio, USA

- Programmed environmental control systems in C++ for pilot and demonstration scale biofuel reactors, resulting in a commercially operating biofuel plant
- Coordinated governmental lab certification by US National Renewable Energy Laboratory for pilot reactor research facility
- Supervised two research assistants for pilot and demonstration scale reactor development

Skills

Languages

Python (SKLearn, SciPy, Pandas, NumPy, Dash, IBM_DB, FuzzyWuzzy)

R (Vegan, NbClust, RCy3, RStatix, mvabund, lsmeans, spaa, dplyr, tidyr, SpiecEasi)

Bash, T-SQL, SQLite, and C++

Modelling and Statistics

Predictive modelling, generalized linear models, single/multiple linear and polynomial regression, advanced multivariate statistics, multivariate ordination, feature clustering, network analysis

Cloud Infrastructure

IBM Watson Studio, IBM DB2, Galaxy Australia, GitHub

General

Creative problem solving, technical writing and communication, consulting, project management, budget management, team coordination

Education and Certificates

- **PhD** (*2017*) – The University of Queensland
Chemical Engineering
- **BSc** w/ Honors (*2010*) – The Ohio State University
Chemical and Biomolecular Engineering
- **Professional Cert** (*2022*) – IBM
Data Science

Community Engagement

- Joint Academic Microbiology Seminars (*2018 – Pr*)
- March for Science – Brisbane (*2017*)
- Engineers without Borders – UQ (*2015 – 2016*)

Interests

Rock Climbing	Home Brewing
Ultimate Frisbee	Escape Rooms
Photography	Gardening

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