James Gilbert

LINKS

Github: **azimov**
Twitter: **@azim0v**
LinkedIn: **jamie-p-gilbert**
My publications

TECHNICAL SKILLS

Programming languages
Python • C++ • Java
JavaScript • PHP • R
C • Bash • Matlab
SQL • PLSQL • C#

Libs, Tools & Utilities:
Git • Mercurial • Docker
PyCharm • PhPStorm • IntelliJ
HTML • CSS • AngularJS
MongoDB • MariaDB/MySQL •
symfony
pytest • nginx • Linux
RStudio • Bioconductor •
BioPython
Sci-Kit Learn • Jupyter • libboost
Flask • Django • Stripe API

Data handling/visualisation:
Pandas • NumPy • SciPy
Matplotlib • Seaborn • ggplot2
D3.js • sigma.js • Bokeh • Shiny

OHDSI Software managed:
CohortDiagnostics •
SelfControlledCohort •
CemConnector • ROhdsiWebApi

EXPERIENCE

MANAGER IN EPIDEMIOLOGY ANALYTICS | Janssen Inc
North York, ON, Canada (Remote) April 2020 - present
- Delivery of REWARD platform for researching unexpected benefits of existing medications using real-world evidence
- Data analysis on 100 Million + database of electronic health records in R and SQL with OMOP common data model
- Open source software developed as part of the OHDSI (Observational Health Data Sciences and Informatics) project - collaboration of 500+ researchers worldwide
- Winner of Johnson Johnson 2020 Spark Award for innovation

SOFTWARE DEVELOPER | Ridebooker
Whistler, BC. April 2019 - March 2020
- Full stack web development in PHP and typescript
- Deployment of apps to Azure Cloud
- Delivery of Stripe payment services integration with REST API

POST DOCTORAL RESEARCHER | Synthetic Biology Research Centre
University of Nottingham, June 2015 - March 2019
- Part of research project developing sustainable methods for chemical production.
- Performed Bioinformatics tasks and statistical data analysis in R and Python
- Delivered software tools for the management of genome scale models (gsmodutils).
- Supervised postgraduate and undergraduate research students.
- Developed in house management Flask application for Micro-GC data collection

PHD IN COMPUTER SCIENCE | School of Computer Science
University of Nottingham, May 2012 - June 2015
- Dissertation "A Probabilistic model for the evaluation of module extraction algorithms in complex biological networks".
- Passed viva voce examination with typographical corrections.
- Worked closely with biologists to deliver data visualization platform.
- Developed the CiGRAM network model in C++ and python.

SOFTWARE DEVELOPER | Worldwide Clinical Trials
Nottingham Science Park, UK, August 2011 - May 2012
- Developed platform using Zend PHP framework with PostgreSQL database for clinical trials data.
- Delivered new platform for the management of Clinical trials, including measurement key performance indicators.

JUNIOR ANALYST SOFTWARE DEVELOPER | Inmarsat
Old Street Roundabout, Shoreditch, London, UK, September 2009 - August 2010
- Full stack web developer - Python Pylons MVC web development framework and jQuery.
- Delivered a new document storage platform integration with other business systems via REST APIs.

KNOWLEDGE

Complex networks • Data mining
Machine Learning • Graph theory
Statistics • Probability theory
Constraints based modelling •
Genome-scale models •
Linear Algebra • Evolutionary Optimisation • Social network analysis
• Network visualisation • Bioinformatics • Metabolic Modelling

MERMBERSHIPS

OHDSI 2020 - Present
BBSRC C1Network 2015 - 2019
FAIRDOM initiative 2016 - 2019
ACM SIGCOMM member 2018 - 2019

PAST SUPERVISION

University of Nottingham iGEM
2017 - Team advisor
The first Nottingham team. •
Developed novel methods for
synthetically generated biometrics
through genetic engineering of E
coli. • Lead supervision of
computational and mathematical
modeling.

INTERESTS

Running • Road Biking
Mountain Biking • Guitar •
Board games • Cinema • Skiing
Snowboarding

EDUCATION

2012 - 2015	University of Nottingham	PhD in Computer Science
2007 - 2011	Loughborough University	First class BSc (hons) in Computer Science
2005 - 2007	New College Nottingham	BTEC National Diploma in Computing
2001 - 2005	The West Bridgford School	11 GCSES A*-C

LOUGHBOROUGH UNIVERSITY, UK
September 2007 - August 2011
- Achieved high grades in Algorithm Analysis, Implementation of Programming Languages, Artificial Intelligence and Team Projects.
- Dissertation "An Implementation of an Adaptive High Dynamic Range Video Player for the Android Mobile Platform".
- Made use of both the Android SDK and NDK (native C code) APIs

EXAMPLE PROJECTS

GSMODUTILS
Python framework for managing genome scale metabolic models
http://github.com/SBRCNottingham/gsmodutils
Borrows from software engineering concept of test driven development, aids the development of large scale metabolic models.

CIGRAM
Generator for synthetic complex networks.
http://github.com/azimov/cigram
http://cigram.ico2s.org/
The result of my PhD thesis, this project encompasses the network generation for synthetic large complex networks. The method uses a geometric approach to capture the probabilities for node connectivity.

NETWORK VISUALISATIONS
Web tool for correlation of gene expression networks
http://netvis.ico2s.org/dev/radnet
Network web visualisations of plant transcription networks based on correlation of gene expression in germinating Arabidopsis thaliana seeds. Written entirely in Javascript with use of AngularJS and sigma.js. The back-end system is built around a CouchDB based RESTful web service.

SELECTED PUBLICATIONS

Teneralli, R.E., Kern, D.M., Cepeda, M.S., Gilbert, J.P., Drevets, W.C., Exploring real-world evidence to uncover unknown drug benefits and support the discovery of new treatment targets for depressive and bipolar disorders Journal of Affective Disorders 290, 324-333

Gilbert, J.P., Pearcy N., Norman, R., Millat, T., Winzer K., King, J. Hodgman, C. Minton, N. Twycross, J. Gsmodutils: a python based framework for test-driven genome scale metabolic model development, Bioinformatics, Oxford University Publishing, 2019.

Gilbert, J.P. and Twycross J, 2018 From clusters to queries: exploiting the modularity landscape of complex networks. In Proceedings, Machine Learning on Graphs (KDD, London 2018).

Gilbert, J.P., 2015. A probabilistic model for the evaluation of module extraction algorithms in complex biological networks. (Doctoral dissertation, University of Nottingham).

Dekkers, B.J., Pearce, S., van Bolderen-Veldkamp, R.P., Marshall, A., Widera, P., Gilbert, J., Drost, H.G., Bassel, G.W., Müller, K., King, J.R. and Wood, A.T., 2013. Transcriptional dynamics of two seed compartments with opposing roles in Arabidopsis seed germination. Plant physiology, 163(1), pp.205-215.