

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

pytest • nginx • Linux

RStudio • Bioconductor •

BioPython

Sci-Kit Learn • Jupyter • libboost

Flask • Django

Data handling/visualisation:

Pandas • NumPy • SciPy

Matplotlib • Seaborn • ggplot2

D3.js • sigma.js • Bokeh • Shiny

EXPERIENCE

SOFTWARE DEVELOPER | RIDEBOOKER

Whistler, BC. April 2019 - Present

- Part of a small development team building and maintaining booking web applications
- Use of Agile methodology with SCRUM, attending daily standup meetings with a focus on short sprints
- Formal code review and application of test driven code written in PHP and TypeScript
- Use of Apache Jenkins continuous integration
- Deployment of apps to Azure Cloud

POST DOCTORAL RESEARCHER | SYNTHETIC BIOLOGY RESEARCH CENTRE

University of Nottingham, June 2015 - March 2019

- Part of an interdisciplinary research project with the core goal of developing sustainable methods for chemical production.
- Performed Bioinformatics tasks and statistical data analysis in R and Python for wet lab biologists
- Delivered software tools for the management of genome scale models (gsmodutils).
- Supervised a number of post graduate 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, August 2011 - May 2012

- Developed a new platform based around the Zend PHP framework with PostgreSQL database to deliver clinical trial performance indicators.
- Followed their principles of good clinical practice for software development
- Delivered new platform for the management of Clinical trials, including measurement key performance indicators.

JUNIOR ANALYST SOFTWARE DEVELOPER | INMARSAT

Old Street Roundabout, Shoreditch, London, September 2009 - August 2010

- Full stack web developer using the Python Pylons MVC web development framework and jQuery.
- Delivered a new document storage platform, KnowledgeTree, integration with other business systems via REST and SOAP APIs.

KNOWLEDGE

Machine Learning • Graph theory
Statistics • Probability theory
Constraints based modelling •
Genome-scale models •
Linear Algebra • Evolutionary Op-
timisation • Social network analysis
• Network visualisation • Bioin-
formatics • Metabolic Modelling

INTERESTS

Running • Cycling • Cricket
Guitar • Board games
Literature • Cinema • Skiing

MEMBERSHIPS

BBSRC C1Network
FAIRDOM initiative
ACM SIGCOMM member 2018 -
2019

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

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.

PAST SUPERVISION

Vanisha Patel - PhD student in Computer Science 2015 to 2019.

Formal assistance on the project using machine learning methods to predict essential microbial genes for building reduced chassis in industrial biotechnology.

University of Nottingham iGEM 2017 - Team advisor

The first Nottingham based team for the iGEM international competition held annually in Boston, MA. The project developed novel methods for authentication with synthetically generated biometrics through genetic engineering of E coli. Lead supervision of computational, programming and mathematical modeling aspects of the project.

PUBLICATIONS

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.