


Matthew Bennett

Research and Data Scientist

 Website  Github  LinkedIn  bennettmatt4@gmail.com

 +44 7756731437

EXPERIENCE

LONDON AMBULANCE SERVICE | DATA SCIENTIST

2022 - present

I work on time-series forecasting in R, using discrete event simulation and statistical modelling. Specifically, I use General Additive Models, Gaussian Process models and various types of simple regression to model KPIs and estimate required demand and resource availability.

Other responsibilities include producing and presenting weekly reports for stakeholders (using R markdown), improving our code-base and best practices, and designing new processes to automate our current tasks.

My current focus is to deepen my knowledge of SQL.

UCLOUVAIN | POSTDOCTORAL RESEARCHER

2019 - 2022

During this post I collaborated on several projects requiring advanced data collection, preprocessing, statistical and deep neural network modelling of human brain data. I presented the results at international conferences.

UNIVERSITY OF GLASGOW | POSTDOCTORAL RESEARCHER

2017 - 2019

Furthered my Ph.D. work, lectured on brain imaging software and mentored several Ph.D., masters, and bachelors of science students.

PROFESSIONAL WORK PROJECTS

SPIKING DEEP NEURAL NETWORKS | PYTHON 3 | LINK

- My latest scientific work has been on face recognition in an unsupervised convolutional spiking neural network implemented in SpykeTorch (which itself is based on PyTorch).
- I experimented with the number of layers, receptive field size, orientation tuning and virtual lesioning (i.e. knockout) on network performance.

HUMAN BRAIN IMAGING AND MACHINE LEARNING | PYTHON 3, MATLAB, R

- Applied machine learning techniques to classify patterns of brain activity (i.e. 'mind reading') to better understand information flow in the human visual system.
- Fitted linear mixed effects models to human brain data.

MANAGING LINUX SERVER FOR GOFFAUXLAB | UNIX, BASH

- Installed and managed a Linux server, along with various specialised software, on which my team-mates depended for data analysis.
- Used a wealth of Unix functionality daily (e.g. user permissions, remote access protocols between Unix and non-Unix machines, automated remote backups).
- Set up a RAID system which successfully prevented data loss and downtime (due to a faulty HDD).

SKILLS

KNOWLEDGE

Data collection • Data preprocessing
Statistical modelling
Machine learning • Neural networks
Presenting and communicating data
Linear algebra • Statistics
Open source software
Unit testing

PROGRAMMING

8+ years:
Matlab
4+ years:
Python 3
2+ years:
R
2+ years:
Bash

TOOLS

Git • Unix system tools • L^AT_EX • SPSS • Microsoft Office

EDUCATION

UNIVERSITY OF GLASGOW

PH.D. IN COMPUTATIONAL COGNITIVE NEUROSCIENCE
2013 - 2017

UNIVERSITY OF LEICESTER

MSc. IN PSYCHOLOGICAL RESEARCH METHODS
2011 - 2012

DE MONTFORT UNIVERSITY

BSc. IN HUMAN PSYCHOLOGY
2008 - 2011

PERSONAL LEARNING PROJECTS

BUILDING NUMPY FROM SCRATCH | PYTHON 3 | [LINK](#)

- This was a project I undertook to better learn how to write Python 3 libraries, classes, and methods.
- Using only standard library routines, I was able to implement an array of methods to carry out linear algebra operations (e.g. fitting least squares models such as polynomial curves to data).

BUILDING AN OPEN SOURCE PLUGIN FOR VIM TEXT EDITOR | VIMSCRIPT | [LINK](#)

- This project taught me about maintaining software that others depend on (e.g. creating documentation, maintaining backwards compatibility, releasing new versions).
- I also improved my understanding of version control (git) and unit testing.