

Curriculum Vitae

Personal

Name: Joost de Folter
Address: Assen, Netherlands
Phone: +31 6 3893 5866
E-mail: folterj@gmail.com
Web page: joostdefolter.info
LinkedIn: linkedin.com/in/folterj
GitHub: github.com/folterj

Interests

Experienced with the entire life cycle from initial data exploration through to modelling, testing, application and publication. Interest in analysis, modelling and visualisation to solve real world problems, and related social and educational aspects. Working together to make a positive impact in the wider community.

Education

2007 – 2012 *Brunel University (UK) – Bioengineering – Advanced modelling and visualisation*

- (Part time) Degree: Doctor of Philosophy (PhD)

1998 – 2000 *Fontys University (Netherlands) – Computer science*

- (Accelerated course) Degree: First degree / Bachelor

1994 – 1998 *Fontys University (Netherlands) – Applied physics*

- Degree: First degree / Bachelor

Languages

English (fluent), Dutch (native), Spanish (fluent), German (conversational)

Additional courses

2023 Francis Crick Institute – Effective management training course
2022 Hugging Face (online) – NLP modelling course
2017 Udacity (online) – Google Deep Learning (advanced class)
2016 University of York (UK), CHE – Regression Methods for Health Economic Evaluation
2014 Brunel University (UK) – Graduate Learning and Teaching Programme (GLTP)
2014 Brunel University (UK) – Academic Practice: Influence and Impact for Researchers
2013 / 2014 Brunel University (UK) – Professional Development in Academic Practice (PDAP)
2005 IEEE / French-Mexican Laboratory in Computer Science (Mexico) – Image and Robotics
2004 Metropolitan Autonomous University (Mexico) – Pattern Recognition

Key journal publications

2022 [OptoPi: An open source flexible platform for the analysis of small animal behaviour](#)
2021 [Automatic instance segmentation of mitochondria in electron microscopy data](#)
2021 [Deep learning for automatic segmentation of the nuclear envelope in electron microscopy data, ...](#)
2020 [Citizen science, cells and CNNs - deep learning for automatic segmentation of the nuclear envelope in electron...](#)
2018 [Decision-components of NICE Technology Appraisals Assessment Framework](#)
2017 [Interoperable End-to-End Remote Patient Monitoring Platform based on IEEE 11073 PHD and ZigBee Health...](#)
2014 [Designing effective visualizations of habits data to aid clinical decision making](#)
2012 [Facilitating insight into a simulation model using visualization and dynamic model previews](#)

Full list of publications at Google Scholar profile: <https://scholar.google.com/citations?user=AggHQrMAAAAJ>

Main work experience

2019 – Current *The Francis Crick Institute (UK)* – Research Software Engineer

Creating solutions for Data/ML/AI projects, including establishing collaborations with research teams:

- Mentoring, advising junior team members, Agile practices, JIRA project management
- Responsible for data processing in large microscopy project focussing on automation and reproducibility (CZI funding) Collaborating with project consortium gathering & defining user requirements, translating into technical requirements
- Histo-pathology convolutional pipeline including xAI explainability visualisation
- Designed image conversion pipeline for deep learning and set up Open Source project for community use ([github:OmeSliCC](#))
- Providing improved pipeline for tracking animal behaviour, from raw images to scientific data points ([github:BIO-B](#))
- Collaborating on fully automated deep learning segmentation workflow (U-Net) and aggregation of crowd-sourced data for detection of biological cell features in Electron Microscopy images, including packaging for Amazon AWS ([github:EaC-NE](#))

2018 – 2022 *Metacognis (UK)* – Technical lead at AI start-up

Leading development at AI start-up:

- Developing an online tool for exploring, finding and analysing scientific literature in an open and visual way
- Establishing development team and project managing software development
- Employ machine learning, Natural Language Processing (NLP, Spacy), Graph Models (neo4j) & visual data analytics

2015 – 2018 *National Institute for Health and Care Excellence (NICE) (UK)* – Operational Researcher

Leading research & development of novel methodology at NICE:

- Design tools to aid appraisal committee decision making, including visualisation of decision outcomes and processes
- Decision making factor analysis, using various text mining / natural language / ML methods
- Qualitative & quantitative User Centred Design research
- Multi-disciplinary simulation modelling (IMI GetReal)
- Establishing and leading collaborations across different teams
- Various external research collaborations including MIT - CBI (Center for Biomedical Innovation)

2014 – 2015 *Computer Science at Brunel University (UK)* – Research Fellow

Research on modelling software fault prediction:

- Creating ensemble prediction models
- Applying Machine Learning techniques

2012 – Current *Imperial college (UK) / Leuven University (Belgium) / Living Earth (USA) / Francis Crick Institute (UK)*

Independent research collaboration on modelling ([github:BioImageOperation](#))

- Establish cross-domain research links, support use in Open Science community including [TRenD in Africa](#)
- Multi agent analysis & modelling including pattern recognition
- Image analysis and tracking using OpenCV for real-time processing

2010 – 2014 *Brunel Research Into Good Health Technology (UK)* – Research Fellow

Collaborating in multi-disciplinary teams as part of European projects: Hydra, inCASA, Reaction (funded by TSB / FP7):

- Embedded software managing (Zigbee) wireless device communication
- Standards implementation (HL7, ISO/IEEE 11073, 11073-20601, Continua Health Alliance)
- Data processing & analysis of motion / pressure sensors for behaviour detection
- Applying data visualisation techniques based on clinicians' feedback

2007 – 2010 *Brunel Institute for Bioengineering (UK)* – Lab technician / PhD

Maintaining and supplying labs and computer systems, and conducting research on modelling and visualisation of liquid-liquid separations:

- Developing model algorithms and advanced UI with visualisation and interactivity including 3D graphics
- Developing computer model using chromatography distribution, diffusion theory and particle simulation, to be able to accurately estimate results of hypothetical experiments
- Developing a scientific computer game based on chromatography theory; featured at scientific public engagement

2003 – 2007 *Innovamedica / Vitalmex (Mexico)* – Head of software development

Research and development in medical equipment as head of software development:

- Project planning / management, recruitment, organising resources, operating in a multi-disciplinary team
- Development, testing and implementation of software for safety-critical medical prototypes
- Compliance with safety standards and risk assessments
- Developing user interface and complete control software for a Ventricular Assist Device on Real Time OS (QNX)
- Developing software for a Gastric Tissue Impedance Spectrometer, including reliable communications protocol
- Create impedance analysis model and classification algorithms using Neural Network