Sebastiano Ferraris

Geospatial Data Scientist, PhD

London

sebastiano.ferraris@gmail.com

github.io/GeoDsBlog/

github.com/SebastianoF

linkedin.com/in/ibis-redibis/

Google Scholar

Research Gate

Skills

Python 9+ years

Data science 9+ years

Algorithms 9+ years

Artificial intelligence 4+ years

Docker 3+ years

Geospatial data science 3+ years

Medical image analysis 4 years

Discrete events simulation 1 year

Dynamic pricing 1 year

Data scientist and researcher

5+ years experience in developing prototypes and algorithms, from proof of concept to production. Proven track records of implementing, validating and scaling algorithms to solve a range of research and industrial problems. Keen on addressing the challenges around productionisation, deployment and algorithms continuous validation. Scientific author published in international journals.

Experience

Data scientist | **General System** — **June 2020 - today**

Geospatial data science services: startup in stealth mode until April 2022

- Developing prototypes to automate spatiotemporal data analysis at scale. Python (scikit-learn, pandas, numpy, streamlit), OpenAPI, Docker, K8s, DeckGl, KeplerGl, git (github, gitlab), AGILE development, CI/CD automation.
- Collaborating with clients and domain experts to quickly and iteratively integrate feedback into prototypes.
- Collaborating with Dev teams to embed prototypes into production.
- Developing and open sourcing python libraries to provide users tooling and examples for the Data Flow Index.
- Contributing to the company blog aimed at building a community around the hot topics of spatiotemporal data science.

Algorithm engineer | **Pace** — **Sept 2019 - June 2020**

Dynamic pricing for the hospitality industry

- Simulation and Validation team, aimed at validate and test the python-based ETL pipelines and the core algorithms with Python, Dask, SQLAlchemy.
- Production code maintenance and new features integration.

Back end developer | **Thought Machine** — **Oct 2018 - June 2019**

Cloud native core banking

- State-of-the-art infrastructure technologies to deploy microservices in a cloud-agnostic environment: Python, Go, Docker, Kubernetes, and derived customisations.
- Maintenance and improvement of the Thought Machine's CI/CD and release pipelines.

MRes + PhD in medical image analysis | **UCL** — **Sept 2014 - Sept 2018**

Research Student

- Pre-clinical trial on pre-term birth steroids administration in a multi-disciplinary international research team.
- Published 7 peer reviewed papers also on Neuroimage and Nature Scientific Report about diffeomorphic image registration and Machine Learning for automated MRI segmentation.
- Reproducible research advocate: open sourced 12 Python libraries (Sec 7.2.2 of my PhD Thesis), and one micro MRI dataset.

Education

2015 - 2018

PhD, Centre for Doctoral Training (EPSRC), Medical Imaging

University College London

MRI ▪ Pre-clinical studies ▪ Numerical methods for Image registration ▪ 8 Papers published ▪ 12 repositories open sourced

2014 - 2015

Master of Research (MRes), Medical Imaging

University College London

Numerical methods for image registration ▪ Digital Image Processing ▪ Optics in Medicine

2010 - 2013

Master of Science (MSci), Mathematics

Università degli studi di Torino

Geometry ▪ Error correcting code theory ▪ Computational modelling.

2006 - 2010

Bachelor's of Science (BSc), Mathematics

Università degli studi di Torino

Volunteering

- Maths Tutor, Action Tutoring
- Scanner and Marshall, Parkrun

Industrial simulation modeller | **SimTec** — **March 2013 - June 2014**

Automotive industry, discrete events simulation

- Material flow simulation models to estimate efficiency, remove bottlenecks, dimension buffers and support plant layout design for a range of clients in Italy and Germany. Siemens PlantSimulation, SimTalk.
- In house shortest paths algorithms development for the internal and external logistics of assembly parts, from plant's gate to assembly line.
- Presented at the first annual Tecnomatix Plant Simulation User Conference in Stuttgart.

Developer | **TcWeb** — **June 2011 - Oct 2011**

Web development and technology consulting

- Term contracts as Junior Developer in Java, Java J2EE, Struts 2, Uml, Python.
- Algorithms developer: prototyped and implemented a generalised Hungarian Algorithm to parse newspapers' pages.

Selected publications

- Ferraris S, van der Merwe J, Van Der Veeken L, Prados F, Iglesias JE, Melbourne A, Lorenzi M, Modat M, Gsell W, Deprest J, Vercauteren T. "A magnetic resonance multi-atlas for the neonatal rabbit brain". Neuroimage. *Neuroimage* 2018 Oct doi: 10.1016/j.neuroimage.2018.06.029.
- van der Merwe J, van der Veeken L, Ferraris S, Gsell W, Himmelreich U, Toelen J, Ourselin S, Melbourne A, Vercauteren T, Deprest J. "Early neuropathological and neurobehavioral consequences of preterm birth in a rabbit model". In: *Nature scientific reports*, May 2019.
- Ferraris S, Lorenzi M, Daga P, Modat M, Vercauteren T. "Accurate small deformation exponential approximant to integrate large velocity fields: Application to image registration". In: *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, Lipsum, June 12-17, 2020.
- Ferraris S, Shakir ID, Van Der Merwe J, Gsell W, Deprest J, Vercauteren T "Bruker2nifti: Magnetic resonance images converter from bruker ParaVision to NIfTI format". In: *Journal of Open Source Software*, 2017.
- Ferraris S "Image computing tools for the investigation of the neurological effects of preterm birth and corticosteroid administration" *PhD thesis, University College London*, 2019.

Please see my Google Scholar Profile for the complete list of publications.

2nd December 2024, public CV.

Sebastiano Ferraris