










Sebastiano Ferraris

Geospatial Data Scientist, PhD

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Skills

Python	10+ years
Data science	10+ years
Algorithms	10+ years
Geospatial data science	5+ years
Artificial intelligence	4+ years
Containerisation	4+ years
Medical image analysis	4 years
Discrete events simulation	1 year
Dynamic pricing	1 year

Data scientist and researcher

10+ years experience in researching and developing analysis, 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 posed by AI and big data systems around productionisation, deployment and algorithms continuous validation. Scientific author published in international journals.

Experience

Senior Data scientist | [Kpler](#)

June 2024 - today

Leading provider of technology-led data, analytics, and market insights focused on the energy and ship-ping markets.

- Developing prototypes and algorithms to automate AIS data analysis.
- Collaborating with Analysts to provide fast solutions to their specific needs.
- Collaborating with Dev teams to productionise proof of concepts into production.

Data scientist | [General System](#)

June 2020 - June 2024

Geospatial data science services: stealth mode startup

- 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.

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](#)



MRes + PhD in medical image analysis | [UCL](#)

Research Student

Sept 2014 - Sept 2018

- 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](#).

Industrial simulation modeller | [SimTec](#)

Automotive industry, discrete events simulation

March 2013 - June 2014

- 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](#)

Web development and technology consulting

June 2011 - Oct 2011

- 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 Veen 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 Veen 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.