Jourdain Mcilquham

Jourdain@Mcilquham.com | linkedin.com/in/Jourdain-Mcilquham | 07549876875

Education

Masters in Remote Sensing and Environmental Mapping **(Sep 2022 – Sep 2023)**
University College London, UK
Relevant modules:

- Spatial-Temporal Data Analysis
- Environmental GIS
- Cartography and Data Visualisation
- Principles and Practices of Remote Sensing

BSc (Hons) Geology (2:1) **(Sep 2017 – Jun 2021)**
University of St Andrews, UK 2:1 Honours
Relevant modules:

- Data Analysis in Earth Science (First class)
- Structural Geology and Tectonics (First class)
- GIS and Spatial Analysis (2:1)
- Geoscience Field techniques (First class)

Skills

Programming languages:	Python Java Javascript R LaTeX	**Software:**	Petrel ArcGIS Pro ArcMap QGis Envi Adobe (Photoshop, Illustrator) Pytorch and Tensorflow

Dissertations

Generative Adversarial Network for Mineral Identification on Mars
Masters Dissertation **(2023)**

- Developed a deep learning model using PyTorch to automatically identify minerals in CRISM images (Mars hyperspectral satellite).
- Implemented a Deep Convolutional GAN architecture for spectral data.
- Generalized the models for use with any spectral data.
- Automated mineral identification from hyperspectral maps using Python.

Geological Characterisation of Recent Lunar Landing sites Using Multispectral Analysis
Undergraduate Dissertation **(2020)**

- Created mineralogical maps for Chang'e 4 and Chang'e 5 landing sites using a multispectral dataset.
- Conducted mineral analysis in Python to geospatially locate geologically important minerals and their assemblages.
- Gained knowledge in remote sensing, Python, ArcMap, and ArcGIS Pro.
- Worked alongside a team at the European Space Agency.

Projects and coursework

Mapping the economic rise and fall of the Welsh Coal Mines **(2023)**

- Created a series of Thematic Maps using ArcGIS Pro with accompanying statistical visualisation in R.

Spatial-Temporal Analysis of California wildfires using machine learning techniques. **(2023)**

- Developed a LSTM (Neural network) and Random Forest in R to predict probability of wildfires in California.
- Acquired remote sensing data and processed it using python.

Statistical Analysis of Hubbard brook **(2019)**

As part of my degree I undertook statistical analysis to determine the affects of deforestation on the quality and quantity of stream water of Hubbard Brook.

- Created several statistical models that were visualised in both R and Python.
- Developed skills in statistical analysis and presentation of data and results.

GIS and Spatial Analysis for Earth Scientists

- Used ArcMap to digitise field geological maps for the coastline near St Andrews University.
- Combined digitised field maps with Lidar data in order to understand the geology out the sea.

Experience

Member of the EuroMoonMars team - (European Space Agency)

- Participated in weekly meetings, discussing ideas and research projects with members of the team.
- Gave me a platform to discuss and participate in interdisciplinary research, learning how scientific disciplines combine to achieve a goal.
- Developed professional communication and networking skills.

Work Experience at Arup

- Work experience in a large multi-national company as part of the geotechnical team.
- Worked on live projects that utilised services from different disciplines in the office.
- Involved in data analysis, statistics and report writing developing attention to detail and working within a strict timeframe.
- Communicated findings to other members of the team.

Volunteer experience with Royal National Institute for the Blind (RNIB) **(2012-Present)**

- Volunteering with the visually impaired for the past 10 years.

Publications

Mcilquham, J., Borst, A. M., Allender, E. J., and Foing, B.: Geological context of recent Lunar landing sites using Multispectral analysis. , EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-16055, https://doi.org/10.5194/egusphere-egu21-16055, 2021.

- Published an abstract of my dissertation in the 2021 EGU conference

Workshops and Hackathon

EuroMoonMars, Earth, Space Innovation EMMESI Workshop **(16-19 March 2021)**

- Presented and discussed my research project within the workshop, developing presentation and communication skills.

Leiden EuroMoonMars Workshop **(12-13 September 2020)**

NASA Space Apps Challenge **(Oct 2020)**

- Worked within a team to create an app that would recommend a user datasets based upon their preference.
- Involved in dataset characterisation and natural language processing using Python and Javascript.

Interests and Hobbies

- Adaptability and thriving under pressure have been instrumental in my achievements in various activities. I have excelled in sports such as Rock Climbing, Fencing, Cycling, and Taekwondo, participating at a National level. Additionally, I have successfully completed the Bronze, Silver, and Gold levels of the Duke of Edinburgh scheme. These experiences have taught me the value of self-motivation and effective teamwork.

Memberships

Fellow of the Geological Society of London

References

References Available Upon Request