Maddie Grady

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Earth Observation & Spatial Data Analysis PhD graduate with a passion for unpicking data and understanding our world, seeking the opportunity to establish a career as data analyst.

Education

PhD in Geography and Earth Science
Aberystwyth University 2016-Present

- Spearheaded collaboration between Aber Uni EOED, Welsh Government and Geosmart Decisions, to devise a new method for automatically identifying changes in land cover in a large series of satellite image data. This work delivered results currently being used to inform government policy.
- Initiated quarterly meetings of all companies to communicate progress. Fostered a collaborative, strategic direction as an implementer and shaper of ideas, to balance the unique requirements of the multi-disciplinary group and ensure the optimal result for all parties.
- Researched and implemented a variety of different data analysis techniques on large datasets (millions of data points) in a python environment; data handling and statistical tests using Scipy (Numpy and Pandas), image manipulation using RSGISLib, GDAL and RIOS, machine learning classifiers using Scikit learn and deep learning techniques using Keras and Tensorflow.
- Coded data analysis approaches with no pre-existing Python implementation and devised code to bulk download data from Amazon Web Services and Google Cloud using SSH and SQL.
- Conceptualised and communicated results. Visualised data in graphs, videos and maps created using Matplotlib, ArcMap and QGIS and presented key findings at conferences, Welsh Government policy meetings, and STEM Ambassador events. Awarded best oral presentation at Aber Uni Postgrad Research Conference.
- Handled project administration and finance in conjunction with the funder (KESS 2 - European Social and Development Fund).
- Experience with Git, BitBucket, Unix shell, high performance computing environments, Conda, and parallel processing.

MSc Remote Sensing and Geographical Information Systems
Distinction *Aberystwyth University 2015-2016*

- Collaborated with the National Plant Phenomics Centre to analyse and model the relationship between grass yield and UAV aerial image productivity statistics. Results of the regression analysis performed in R were used in further study at the Centre.

- Formulated analysis techniques for a variety of datasets and problems including; regression modelling, spatial statistics, species distribution modelling, and rule-based classification systems.
- Sharpened my skills in Excel database management (e.g. pivot tables and macros) ArcGIS, ArcPy, QGIS, ENVI, Erdas Imagine, R, and SQL to produce high quality essays and reports.
- Achieved a Distinction, highlighting an excellent track record of high quality presentations, essays and technical reports both individually and as part of a team.

BSc Physical Geography

1st Class (Hons) *Aberystwyth University 2012-2015*

- Drove dissertation research project successfully identifying bird biodiversity hotspots using maximum entropy species distribution modelling and classifying the type of forest present.
- Built a strong understanding of field data collection, quantitative and qualitative research methodologies and basic statistics (e.g. testing hypothesis).

Work

Associate Lecturer, Aberystwyth University

Based at Hohai University, Nanjing, China (Short-term Contract)
October 2019 – December 2019

- Assembled a series of lectures (12 lectures of 1.5 hours) and instructed Hohai university students in the basics of GIS implementation, spatial data analysis techniques and different types of spatial data sources. Utilised problem-solving, resource and time-management skills to ensure successful delivery of new, jargon heavy, content to Chinese students with mixed English language proficiency.
- Fostered collaboration with Hohai University staff to ensure the lecture content was successfully conveyed to the students.
- Adapted quickly to a different work system in a foreign language.

Postgraduate Demonstrator, Aberystwyth University

Sept 2016 – April 2019

- Collaborated with lectures on the Earth Observation from Satellites and Aircraft module to instruct undergraduate students how to perform a classification of different land cover types in a satellite image. Volunteered to go on field work with the students.
- Delivered geographical data analysis assistance to undergraduate students, supporting lecturing staff. Spoke about analysis in a GIS and statistical tests and techniques and demonstrated technical processes.

Team Member, KFC

June 2015 – Sept 2015 (Summer Position)

- Handled greeting and serving customers in an efficient and pleasant manner and worked effectively as part of the service team.