Mark Dawson

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Key Skills

Primary Languages	Python, JavaScript, Typescript, Matlab, VBA
Frameworks	Django Rest-Framework, Vue3, Nuxt3
APIs	Stripe, Mailchimp, Sendgrid, Mapbox
DevOps	Kubernetes, Firebase and Google Cloud, CI/CD
Modelling	Scikit-learn, TensorFlow
Operating Systems	Linux, OSX, Windows
Mathematics	Statistics, Numerical Modelling, Empirical methods

Experience

HiYield *St Austell, UK*

JUNIOR FULL STACK SOFTWARE DEVELOPER *March. 2022 - Present*

- **Digital Product Studio**. The company supports clients throughout each stage of digital product development. From discovery to digital design and software development.

- **Skills developed**: API development with Django Rest Framework and express. Vue3 and Nuxt3 web app development. Tailwind CSS. Version control with Github and Bitbucket. Docker, Kubernetes for DevOps and CI/CD with Buddy and Netlify. Google cloud and firebase.

- **Achievements**: Since joining HiYield I have quickly built up software development skills in client and server-side technologies. I am working as the sole developer on two client accounts and am responsible for implementing new features and fixing bugs. The stack I use for managing these projects are django rest-framework and kubernetes hosted on digital ocean backend and Nuxt2 on netlify frontend. These are legacy projects and newer projects I am working on use Nuxt3 and serverless approaches on the backend. This includes firebase auth and cloud functions and express apis on Google Cloud Run.

Mott Macdonald *Cambridge, UK*

DATA ANALYST / NUMERICAL MODELLER *March. 2018 - November. 2021*

- **Engineering consultancy**. The company has over 70 years' experience in investigating, developing and managing the water environment in countries all over the world. This includes flood management schemes, coastal and port design, water quality studies and water resources management.

- **Skills developed**: Flood modelling and analysis, hydrology, wave overtopping, water quality modelling, project management, Python, data analysis, technical report writing, GIS, public speaking.

- **Achievements**: I have worked on coastal fluvial and hydrological modelling studies to assess flooding, water resources and water quality. I have begun managing projects up to the cost of £32,000. I have led on a number of software development projects, which have been nominated for internal awards. I have organised and hosted a seven-session internal Python workshop to the global Mott Macdonald community which has had an attendance of +100 Motts employees.

inspiratia *London, UK*

DATA ANALYST *Oct. 2016 - Jan. 2018*

- **Online news and analysis**. The company helps clients operate in the global infrastructure and renewables sectors by providing real-time data, market analysis and news. I was responsible for curating the database, performing statistical analysis, data visualisation and writing data driven articles.

- **Skills developed**: Corporate and project finance, capital markets, macroeconomics, statistics, politics, Python, Pandas, Numpy, Matplotlib, Plotly, experience of d3.js, RESTful APIs, excel, writing, journalism, global markets.

- **Achievements**: I took the lead on improving the teams data visualisation capabilities. This included utilising a range of data visualisation tools and building interfaces for people less experienced with coding. I have also built tools for communicating with APIs such as Companies House and Google for monitoring project progress.

ABPmer   *Southampton, UK*

Coastal Modeller   *Aug. 2014 - Aug. 2016*

- **Marine environmental consultancy.** A leading marine consultancy with over 60 years experience, the company applies knowledge and technical ability to offshore and coastal operations. As part of the modelling team I was responsible for building and calibrating models to capture the hydrodynamics and sediment dynamics of local and regional marine environments.

- **Skills developed**: Numerical modelling (Delft3D, Mike21), Matlab, Python, Linux, met-ocean analysis, statistical data analysis, technical report writing, GIS, Geodetics, marine operations

- **Achievements**: I was recognised within the team for my ability with Matlab and ran a number of research and development projects to build analysis tools using the environment. I developed my understanding of maths, in particular statistics, probability, geometry and algebra. During this period I had the fortune to continue working with doctors and academics both internally and from local universities. Through this experience I became an organised researcher and developed a methodical and pragmatic approach to my work.

Education

Master of Research (MRes.), Ocean Science   *University of Southampton, UK*

School of Ocean and Earth Science   *Sept. 2013 - Nov. 2014*

- Supervisor: Prof. Robert Marsh
- **Thesis**: Investigating the utility of a new trans-basin array (OSNAP) for monitoring changes in the Labrador.
  - Quantify properties of water masses in the North atlantic using the general circulation model NEMO and a lagrangian diagnostic tool. Involved heavy use of Linux systems for running simulations and Matlab/Python for data post processing, and visualisation.

- **Relevant courses**: Global Ocean Monitoring, Computational Data Analysis, Climate Dynamics.

Bachelors of Science (BSc.), Ocean Science,
Upper second-class honours   *Plymouth University, UK*

Faculty of Science and Engineering   *Sept. 2009 - Jul. 2012*

- Supervisor: Dr. Daniel Conley
- **Thesis**: Predicting the Morphological Evolution of an intermediate Beach using Xbeach.

- **Relevant courses**: Modelling the marine environment, The Global Ocean, Physical Oceanography, Meteorology.

Awards

2018   **Mott Macdonald - Digital Projects Awards**, Shortlisted - EA automation tool

Presentations

Python Workshops   *Global*

Event organiser and presenter   *Sept. 2018*

- A series of 7 (one a week for seven weeks) workshops covering an introduction to Python, Pandas, Matplotlib and Python with ArcGIS.

Personal Statement

I started my programming journey as a scientific programmer in academia, developed into a career in data analysis with interests in statistical methods and machine learning. Upon moving to Cornwall I changed track and focused on software development. I have quickly picked up skills in front and backend development as well as devops.

I am constantly learning new skills and aim to deploy best practises in everything I do.

Programming has been a passion of mine for a number of years and I am always looking for opportunities to improve my skills and the standard of my code. I keep up with developments in Python and Javascript and enjoy engaging with the community. I spend a good deal of time writing code as well as reading about new and interesting language features.

I am eager to apply my passion and skills to interesting real world applications. I am dedicated and persistent in solving complex problems and so I am looking for a position which will present interesting challenges and

provide opportunities for growth and improvement.

I am looking to work in a collaborative team environment with people who are enthusiastic about software development and solving interesting problems. In return, this team will receive a highly motivated developer and an avid learner.

Portfolio

2022 - WomenWise

EXETER UNIVERSITY - QUESTIONNAIRE

- Greenfield project building a questionaire for lecturers at Exeter Uni. Built with Nuxt 3 firebase auth, firestore, cloud functions and stripe.

2022 - WomenWise

WOMENWISE

- Greenfield project building a site that included a user auth subscription and questionaire. Built with Nuxt 3 firebase auth, firestore, cloud functions and stripe.

2022 - StandOutCV

STANDOUTCV

- Built features such as implementing connectivity between the database with Mailchimp and Stripe APIs. Also aided in moving the project to a new Kubernetes cluster setup with the support of a Kuberntes professional. General maintenance and bug-fixing as well as project management on the account.

2022 - GoCollaborate Software Development

GOCOLLABORATE

- Built a user facing CMS to allow users to set up their own accounts and personalise their own accounts/ campaigns using the service. This included building a range of new API endpoints and Vue components. General maintenance and bug-fixing as well as project management on the account.