41 Chandlers House, Bristol

Email: bernie.mason@noaa.gov

U.K. Phone: 07498203544

Profile: I am a junior software developer with a scientific background in atmospheric processes. I have a strong work ethic and am keen to expand my skills and knowledge. I started programming during my PhD, in 2006, and continued building software for data analysis and custom instrument operation during my time as a scientific researcher. I started full time software development in September of 2016 working at GNUPP-Ltd were I have been constantly challenged to improve my general programming and development knowledge.

##### Skills and Expertise

I have extensive computer experience. Programs with which I am familiar include, but not limited to;

* **.Net :** ASP.NET MVC 5, Entity Framwork, Ninject, Automapper, Nuget, Umbraco, C#
* **Sql :** My, MS
* **Source Control :** Git
* **Linux :** bash
* **Additional :** HTML, Javascript, LabVIEW, Igor, Python, Matlab, Scilab

##### Work and Education

**Software Developer at GNUPP Ltd : 08/2016 - present**

Oxford, UK

* **Projects** 
  + Blog website from the ground up, (in MVC 5) : https://bernie.gnupp-ltd.com/
  + Basic HTTP web server.
  + Bloodbraid, (May 2017 onwards) : Building a Magic the Gathering deck building application. I have built data gathering software and a database (MySQL) alongside an interfacing data layer. I am currently in the process of building services and an API.

**Postdoctoral Researcher at National Oceanic and Atmospheric Association : 08/2014 – 08/2016**

Chemical Sciences Division, Boulder, Colorado

* + Developing and operating combined cavity ring-down/photo-acoustic spectrometers for extinction and absorption measurements of ambient aerosol optical properties. Characterizing instrument performance in the laboratory and under ground level deployment conditions.
  + Analysis of historic flight data to assess the instrument performance against other commonly used aerosol absorption measurements.

**Ph.D. in Aerosol Optical Properties : 01/2011 – 06/2014**

University of Bristol, Aerosol Dynamics Group, Professor Jonathan Reid Laboratory

* + Cavity ring down spectroscopy for determining light-scattering properties of single particles and aerosol ensembles. Assessing fundamental optical properties of common atmospheric analogues for use in atmospheric radiative forcing models.

**M.Sci. in Chemistry : 09/2007 – 07/2010**

University of Bristol, Bristol, United Kingdom

* Final year research project: synthesized heterogeneous palladium and platinum catalyst analogues for synthesis of methyl methacrylate, a monomer used in the creation of the plastic, polymethyl methacrylate.

##### Publications

1. B.J. Mason, M.I. Cotterell, T.C. Preston J.P. Reid and A.J. Orr-Ewing  ‘Direct measurements of the optical cross sections and refractive indices of individual volatile and hygroscopic aerosol particles’ *The Journal of Physical Chemistry A,* 2015, 5701-5713.
2. M.I. Cotterell, B.J. Mason, T.C. Preston J.P. Reid and A.J. Orr-Ewing  ‘Optical extinction efficiency measurements on fine and accumulation mode aerosol using single particle cavity ring-down spectroscopy’ *Physical Chemistry Chemical Physics,* 2015, 15843-15856.
3. B.J. Mason, J.S. Walker, J.P. Reid and A.J. Orr-Ewing  ‘Deviations from plane-wave Mie scatteri0ng and precise retrieval of refractive index for a single spherical particle in an optical cavity’ *The Journal of Physical Chemistry A,* 2014, 2083-2088.
4. T.C. Preston, B.J. Mason, J.P. Reid, D. Luckhaus and R. Signorell 'Size-dependent position of a single aerosol droplet in a Bessel beam trap' *Journal of Optics,* 2014, 1-11.
5. M.I. Cotterell, B.J. Mason, A.E. Carruthers, J.S. Walker, A.J. Orr-Ewing and J.P. Reid 'Measurements of the evaporation and hygroscopic response of single fine-mode aerosol particles using a Bessel beam optical trap' *Physical Chemistry Chemical Physics* 16(5), 2014, 2118-2128.
6. B.J. Mason, S.-J. King, R.E.H. Miles, K.M. Manfred, A.M.J. Rickards, J. Kim, J.P. Reid and A.J. Orr-Ewing 'Comparison of the Accuracy of Aerosol Refractive Index Measurements from Single Particle and Ensemble Techniques' *The Journal of Physical Chemistry A* 116, 2012, 8547–8556.