To whom it may concern,

I am writing to apply for the position of Software Engineer in Bristol which I have seen advertised and would be very interested in. I am a postdoctoral research associate at the University of Bath and I am seeking a software development role outside of academia.

I am a highly skilled Python programmer and have worked with the language on a daily basis for four years. During my PhD and in my current postdoctoral position, I have developed analysis software written in Python in order to process data that has been outputted from simulations. I have published open source software packages, taught Python and Fortran programming to undergraduate and postgraduate students and have been invited to speak at conferences about good practice for academics who code. In my spare time I enjoy playing around with analysis of real-life datasets and current affairs and have recently created analysis graphs of interesting COVID-19 related data.

I am looking to move out of academia and into industry because I would like a role with a greater focus on programming and data analysis which is where I have realised my real interest lies. I am seeking an opportunity that will allow me to further develop my programming skills, and I am confident in my ability to pick up additional programming languages.

This opportunity looks to be a great fit with my skills and I would be really interested to hear more about the company.

Kind regards and many thanks,

Dr. Adam Symington

ars44@bath.ac.uk

07460 367 765

**What excites you about a career in technology at Aviva**

What excites me about a career in technology at Aviva is the prospect of being able to develop my programming skills whilst solving real-world problems in the world of financial services. I am looking for an opportunity to move out of academia and into industry because I would like a role with a greater focus on programming and data analysis which is where I have realised my real interest lies.

I very much enjoy writing and testing code, and I have worked with several programming languages, mainly Python, on a daily basis for four years. During my PhD and in my current postdoctoral position, I have developed analysis software written in Python in order to process data that has been outputted from simulations. A career in technology at Aviva would give me the opportunity to further my programming skills in Python and in additional languages and apply them in a commercial setting which really excites me.

Aviva’s position as a multi-national, industry-leading company makes it a hugely exciting place in which to develop my career, both in relation to development opportunities but also to company culture and employee engagement which is evident from the website.

**Tell us about any positions of responsibility, sports, societies, voluntary work, gap years or interests that you feel support your application?**

I have always enjoyed playing sport, and I have held various positions of responsibility and leadership in sports clubs which have enhanced my teamwork and interpersonal skills. In particular, I have played cricket for most of my life and have captained my team at Dundrum CC as well as coaching various junior teams. During my time at university I was part of the cricket club and spent two years on the committee as social secretary. My other main sporting interest is rugby, and I founded a postgraduate touch rugby club with a group of peers which now trains weekly. I am also a keen cyclist, and recently I took part in a charity cycle from Land’s End to Bristol, raising over £3,000 for the MS Society.

In my spare time, I also enjoy playing around with real life datasets, and have recently been exploring data related to COVID-19 from sources such as the ONS and twitter. Learning new analysis methods, finding ways to speed up pieces of software, extracting useful information from messy datasets and writing useful software are all things that genuinely get me out of bed in the morning.

**As the world of technology changes at a rapid pace, our technologists are continually learning and bringing in new ideas to keep us ahead of the curve. Share with us how you have developed a skill or knowledge outside of your academic studies. Why did you learn it, and how have you used it?**

During the summer that followed my undergraduate Chemistry degree, I undertook a summer job in the computational chemistry department at the university which really sparked my interest in computer modelling and simulations. To further my ability in this area, prior to starting my PhD I spent time teaching myself how to program with Python using online web resources and books. Python programming became invaluable to my PhD project, allowing me to automate the running of large-scale simulations, significantly reduce the analysis time and improve the quality of my results.

In addition, over the past four years I have been involved in various teaching initiatives outside of my academic studies, specifically in relation to programming skills. I feel that programming skills are essential to modern scientific research, and that university students would benefit massively from formal introduction to programming as part of their courses. I have written two master’s level practical courses to teach undergraduate chemistry students how to use Python in data analysis, and I was part of a team teaching a set of courses designed to provide postgraduate students with the fundamentals of software development.

**We believe how you work is just as important as what you do. We have a clear set of values at Aviva which are: Care More, Kill Complexity, Create Legacy and Never Rest. With these in mind, which resonates with you the most, and why?**

Never Rest resonates with me most, as I have a very strong work ethic and I firmly believe that hard work and determination are the key to success. Throughout my PhD and in my current role I have managed multiple projects at once, yielding nine peer-reviewed publications which in academia are a key indicator of a project’s success. Publishing papers of this kind takes time and patience as well as resilience and the ability to act upon constructive criticism.

Furthermore, I have developed great relationships with my peers and supervisors in my work and studies, and I always feel confident and comfortable putting my ideas forward in a respectful and collaborative manner when I can see an opportunity for improvement.

**What has motivated you to choose a career in data science**

What excites me about a career in data science is the prospect of being able to develop my programming and data analysis skills whilst solving real-world problems in the world of financial services. I am looking for an opportunity to move out of academia and into industry because I would like a role with a greater focus on data science, data analysis and programming which is where I have realised my real interest lies.

The most fulfilling and interesting part of my academic career has been the analysis of large, messy datasets. I find it incredibly satisfying to take a messy dataset and through a series of steps, present an insightful graph that clearly displays an identified trend, or make a prediction based upon the data. Furthermore, as part of PhD and in my current role, I have spent time writing and testing code, going as far as to publish some Python packages. This is another of my passions and complimentary to a career in data science. Recently my research has started utilising machine learning to make predictions about the properties of cathode materials. This recent exposure to machine learning has broadened my horizons and is an area that I want to explore next my career.

**How would you explain machine learning to someone less experienced than you**

Machine learning was neatly described by Arthur Samuel in 1959 when he said, *“Machine Learning is the field of study that gives computers the ability to learn without being explicitly programmed”.* In practice, a machine learning model will take an initial dataset and use it to make predictions. For example, given an initial dataset that contains the heights and weights of different people, a machine learning model could be used to predict the weight of a new person, based upon their height. In this example, the model does not know the weight of this new person prior to the calculation, it has predicted it, with some degree of certainty based upon the training data.

**From your pre application research, why would you like to work for LV**

I understand that LV has recently joined the Alliance holdings group, which is really exciting given its size in the UK insurance market. LV’s position as an industry-leading company makes it a hugely exciting place in which to develop my career, both in relation to development opportunities but also to company culture and employee engagement which is evident from the website.

LV’s partnership with Bristol university, which bridges the gap between the commercial world and academia is a really appealing aspect of the company. During my time in academia I have always had a strong collaboration with industry and it would be fantastic to be on the other side of that equation. Furthermore, I have spent a large portion of my time delivering programming classes/lectures and I would love to do this as part of LV. I also think it is highly commendable that private industry is offering skills training to university students and I want to be a part of it.

In the job advert, the data science team is described as “operating across the entire business” and as a “consultancy within the business”. I find the idea of being part of a team that is producing useful and actionable intel to the whole business incredibly appealing. Furthermore, working across different aspects of the business is a very useful learning opportunity as well as interesting.

What motivates me about a career in data science is the opportunity to develop my data analysis and programming skills whilst solving real-world problems in a commercial setting. I am looking for an opportunity to move out of academia and into industry because I would like a role with a greater focus on data science, data analysis and programming which is where I have discovered my real interest lies. Data is an invaluable resource for businesses and the opportunity to facilitate its use in industry is hugely exciting.   
  
The most fulfilling and interesting part of my academic career has been the analysis of large, messy datasets. It is particularly satisfying to analyse a dataset and present an insightful, concise graph that displays an identified trend, or to use data to make a prediction. Furthermore, as part of my PhD and in my current role, I have spent time writing and testing code and I have published Python packages. These are skills which I feel are complimentary to a career in data science. In addition, my research has begun to involve utilising machine learning to make predictions about the properties of battery materials. I have very much enjoyed this exposure to machine learning, and this is the direction I wish to take my career next.

In short, machine learning relates to the practice of giving computers the ability to learn without having been explicitly programmed. What this means in practice is that a machine learning model will use an existing dataset to make predictions about new data. For example, given an initial dataset that contains the heights and weights of a group of people, a machine learning model could be used to predict the weight of a new person having only existing knowledge of their height. In this example, the model predicts the weight of the new person with some degree of certainty based upon the 'training data' which are the height vs weight patterns observed in the initial dataset.

I understand that LV= General Insurance has recently joined the Allianz UK group, which is really exciting given its size in the multi-national insurance market. LV’s position as an industry-leading company makes it a hugely exciting place to develop my career and I was pleased to read that training opportunities would be on offer and dependent on my specific needs.   
  
LV’s partnership with Bristol University, which bridges the gap between the commercial world and academia, is of particular interest to me and makes LV a really appealing company to work for. From my career in academia to date, I have experience of collaboration with external companies including AWE, the Faraday Institution, and Diamond Light Source, and as such I am confident in my ability to engender successful collaborative relationships with academic institutions from the other side. I was pleased to read about LV's Data Science Hub as part of the relationship with Bristol University, something I believe will be of real value to the students.