

Dr. Jon Reades - Associate Professor in Spatial Data Science

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Job title: Associate Professor in Spatial Data Science

Location: London, UK

How did you get to where you are now?

I have a BA in Comparative Literature, of all things, but became interested in the technology of publishing and learned basic web coding as an undergraduate. This led to a job with a start-up and as well as a lot learning on-the-job and through formal evening classes. However, after nearly 10 years in industry I wanted a new challenge: I have always loved cities and could see that new forms of data were becoming available to geographers and planners, but that very few people were comfortable with this change. So I did a Masters and PhD in Urban Planning at UCL and then became a Lecturer at King's College London. After 8 years at King's I moved back to the Centre for Advanced Spatial Analysis at UCL so that I could develop my skills further. This might look 'all over the map', but it is a result of following my curiosity even when I wasn't quite sure where it would lead and I managed to find ways to relate what I knew to what people needed. I think that my career trajectory just shows how both much industry and academia need people who can bridge divides: whether it's people in marketing who can 'talk tech' or people in data science who can 'talk critical data theory'! Geography is one of the very few degrees that combines these types of experience.

What are you responsible for?

Academia feels like 40% admin, 40% teaching, and 40% research, but there's no 'typical week' and that's

one of the things I love about it: during term-time it's all about teaching and the admin that goes with that, but once term is over there's more time for the stuff that keeps me excited because I'm learning new things. I love my PhD supervisions: my students are doing really exciting work. Recently, Masters supervisions have [led to publications](#) and I've gained new skills through this process. This past year was obviously not 'normal', but I used it as an excuse to invest in making all of my teaching materials open source: <https://github.com/jreades/i2p>. My research and my teaching [overlap a lot](#): both make extensive use of code and coding tools that are widely used in the tech industry as well (Git/[GitHub](#), Jupyter, [Docker](#), etc.), and I've had a lot of fun [collaborating with colleagues](#) at other institutions on research using these same tools.

What skills and characteristics do you need for this role, apart from geographical knowledge?

For what I do, there's a requirement to be able to think abstractly and analogically about problems and then express them as (Python) code as part of a data analytics pipeline. But looking more widely at what academics do, I don't think there are many other jobs entailing so many different skills: teaching, curriculum design, mentoring, creative thinking, writing, design, coding (whether qualitative or computational), presenting/public speaking, budgeting and strategic planning... the list goes on. Academia is obviously diverse in terms of skills, but Geography is particularly so because we 'interface' with so many other disciplines: history, computer science, anthropology, environmental sciences/STEM... learning the different vocabularies and norms of each field sets you up to translate across disciplinary boundaries. For me it's been about curiosity and bridging gaps, but for other academics it's about focus and becoming the best in the world in one particular area. There's space for both.

How does geography feature in your work?

Geography features everywhere: I work with [spatial data at scale](#), with the history of [computers in geography](#) and of [economic geography](#), and with how infrastructure, industry, and people relate across space to [drive urban and regional development](#). Some of these understandings are led by the data — events, zones, and regions — and others are led by the theory — networks, fields, and interactions. In my programming I may make use of spatial autocorrelation or clustering techniques as part of a workflow that looks a lot like a spatially-aware data science, but I really enjoy working out how to translate

the results into something that a reader with no background in the science can understand.

What do you enjoy most about your job?

I most enjoy being able to *still* follow my curiosity wherever it leads: although there are a lot of other demands on my time, I try to find ways to learn new skills or ideas by connecting things I *have* to do with things I *want* to do. I wanted to learn how Machine Learning worked, and since I have to supervise Masters students I found one who already knew about ML and [pointed them at a geographical problem](#). I then learned by reviewing their code as part of our supervisions. Similarly, I wanted to communicate my thoughts on industrial location and strategy to a wider audience so I found a co-author who was a prolific strategic planner and [we wrote a book together](#). Now I'm bringing together my interest in language with my interest in geography and data through my PhD students who are working on Natural Language Processing to examine gender bias in academia and how knowledge spillovers work.

What are the opportunities for career progression and where might you be in 5 years?

Although I am regularly contacted by recruiters looking for (spatial) data scientists, I'm happy in academia. For myself, within five years I hope to be leading a programme of work involving a mix of PhDs and post-docs focused on making use of Natural Language Processing to tackle broadly-conceived economic geography questions. More generally, progression in academia requires a well-rounded profile of teaching, administration, funding, and research. I think most academics *hope* to progress up one 'level' (e.g. Lecturer to Senior Lecturer, Senior Lecturer to Reader) every 4–5 years on average but there's a *lot* of variation.

What advice would you give to someone wanting to go into this career?

Having worked in industry means that I know there are always options if things don't pan out the way I hope in academia. And it's in the industry that I picked up the skills — being able to code, manage data, and find and present patterns in data — that distinguished me on the academic job market. So although I'm older than most people at my career stage, I also feel comfortable with my choices. I made a conscious decision about trade-offs and think that it's important to check in with yourself every few years as to whether they are worth it. Ultimately, a PhD is a pre-requisite for an academic job but most PhDs won't end up in academia, so doctoral students should have an eye on how they can 'pitch' themselves to governments, non-profits or NGOs, or the private sector through their research and experience. Who else has to try to manage an ill-defined project with unspecified goals on a shoe-string budget that requires you to manage 'up' (your supervisors) as well as 'down' (the students that you teach), and that will then be externally assessed after three-or-so years by people you've never met?

How do you maintain your knowledge and interest in geography outside of work?

I'm often motivated by personal experience: when I started looking to buy a house I was shocked by how poor the analyses presented by the big property web sites were and started looking into the Land Registry Price Paid Data. The led to [data visualisations](#) shown at the RGS, and, ultimately, to a series of original research articles on housing in London ([1](#), [2](#), [3](#)). My collaborative PhDs with the British Library around Natural Language Processing emerged through a combination of reading for curiosity about technical developments in the field through services like [Medium](#), [Pocket](#), and [so on](#)), and talking down the pub with staff from the BL about what they were working on — it led me to realise that there was a fascinating source of data whose value they grasped but couldn't clearly articulate... Of course I love to travel and find it inspiring, but being social and making use of social media for work is actually how I keep up-to-speed with things.

Why did you choose geography?

I chose geography because it allowed me to bring together all of my different interests: text, data, cities, and code. In North America the people I work with would probably all be in different departments, but here in the UK I sit at a table with people from Computer Science, History, Sociology, Architecture, STEM, Planning, and of course Geography. Talking to them allows me to see new ways to tackle challenges by translating problems and solutions across boundaries. If you're an A-level student then I think geography allows you to make connections, but the world *really* opens up when you reach university: each department has its own strengths and you can work them out if you look closely at the modules on offer and what people are researching. It's the same at the post-graduate level: there's probably a programme out there to link up whatever issues you're most interested in!

* This interview was undertaken in 2021 and was correct at the time of publication. Please note that the featured individual may no longer be in role, but the profile has been kept for career pathway and informational purposes.