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OBITUARY

In memoriam: Martin Charlton



Martin Edward Charlton (1957-2021)

Martin Charlton was one of the leading pioneers of quantitative geography and geocomputation whose work helped inspire the recent resurgence of spatial analysis and geographic data science. He was born in Newcastle upon Tyne, where he attended the Royal Grammar School and subsequently the University of Newcastle upon Tyne, where he gained a First Class (Hons) degree in Town and Country Planning in 1978. After a short spell as a planner in Chichester, Martin returned to Newcastle University for the next 24 years, first registering as a PhD student with Stan Openshaw, then as a researcher in the Centre for Urban and Regional Development Studies, before achieving his first academic position as a Lecturer in the Department of Geography in 1991. In 2004, he co-founded the National Centre for Geocomputation at Maynooth University, Ireland where he remained until his retirement in 2020.

Martin's career spanned the (geo-)computational revolution of the 1980s that resulted in the widespread use of computer programming for spatial analysis in geography leading to a core component of the current GIScience body of knowledge. His research was fundamental to many of the methodological innovations that are now central to the practice of quantitative geography: geodemographic classifications of census small area data, the creation of bespoke geographic information and mapping software, and a number of innovative spatial data

analysis techniques. His research played a key role in two major contributions to the discipline: the Geographical Analysis Machine (GAM) in 1987 working with Stan Openshaw, Alan Craft and many other collaborators, and Geographically Weighted Regression (GWR) in 1996 working with Stewart Fotheringham and Chris Brunsdon. Central to both the GAM and GWR was the idea of using innovative computational - and, critically, geo-computational - methods to explore and explain geographical patterns in data, moving away from 'one size fits all' types of modelling applied uniformly across space, to focus on how outcomes and their causes vary across a map.

Typically, Martin was responsible for the initial coding, frequently in Fortran and/or R, and implementation of functions to undertake these operations, which were later developed into standalone tools and open source packages. Martin's time spent at Newcastle spawned the widespread use of GAM and GWR, while at Maynooth, Martin developed a new small area geography for census dissemination, the expansion of the GWR methodology to a GW modelling paradigm and smart (programmable) city projects and dashboards. Martin has left us with a large and impressive body of research which currently stands at 22,000+ citations from 200+ publications.

As well as considering his reputation in this metric-defined manner, with Martin we fondly remember his unique approach to academia. A memorable aspect of Martin's talks was that, despite the content often relating to fairly abstract ideas in computing, statistics or geographical data, there were always plenty of photographs to bring the subject to life and make it relevant to each and every member of the audience. These images were typically of people and places, and helped to tell the human story behind many of the ideas being discussed. For Martin these ideas were not purely mathematical abstractions, but concepts grounded in the people whose ideas they were, the motivations behind the ideas, and the places where the ideas were discussed. His work certainly contained complex mathematical ideas, but he was aware of the stories behind them, and made a place for their telling. This humanistic aspect was always of importance in his work. He would often remind us that the human geographical data we analysed arose from the lives of people; in finding patterns we were understanding something deeper about these people, and hopefully influencing policies that would ultimately benefit them.

Martin was an inspiring teacher. His lectures were entertaining and highly popular with students and he always made the time to help students struggling with the more difficult aspects of their studies, especially at dissertation submission time when the corridor outside his office would be lined by students waiting for Martin to patiently assist them with their geocomputational issues. This generosity with his time was extended to younger professional colleagues - we have heard many people recalling how he had helped them in their early careers, in some cases saying he was the very reason they became an academic in the first place. Martin was very much at home in his office - often 7 days a week - which again made him highly accessible. He thoroughly enjoyed applying geographical techniques to the wide range of research projects which his colleagues and students were grappling with. Hence, he has rather an eclectic mix of publications, ranging from cancer clustering through airborne LiDAR, to digital humanities. His work dealt with geographies as diverse as river channel dynamics in north Northumberland and the pyrogeography of sub-Saharan Africa. If there was a count of acknowledgements in dissertations, Martin's metric would be extraordinary.

Finally, we would like to remember Martin as our dear friend. Over many years, we have had numerous adventures together: writing books, giving talks, shifting pies, curries, and pints, and on at least one instance signing the Official Secrets Act. We travelled around the world, including visits to China, the US, Canada, Australia, Japan, Brazil and many European countries, and discussed ideas over a beer (actually rarely 'a' beer) in all of these places. In destinations with a cathedral or church, we would often accompany him to look at its organ, as Martin was a highly accomplished and passionate organist. However even travels to places much closer to home were always a pleasure, thanks to the company he provided. Martin is missed not only as an excellent colleague but as our great friend and we are all the sorrier he was taken so early just as he should have set out to enjoy a full and well-earned retirement.