

Rafael Prieto Curiel | Curriculum

📄 www.rafaelprietocuriel.com

Education

University College London

Doctorate degree in Applied Mathematics

2014–2018

Mathematical models of social issues such as migration, crime, fear and road accidents

University College London

Masters in Statistics

2013–2014

Spatial statistics, simulation

Instituto Tecnológico Autónomo de México (ITAM)

Degree in Applied Mathematics

2004–2009

Experience

Vocational.....

University of Oxford / EAFIT - Mathematical Institute

Oxford

Postdoctoral Research Assistant

2018-current

PEAK Urban - Complex Systems and Data Modelling for Urban Developments

Organisation for Economic Co-operation and Development (OECD)

Paris

External consultant

2015-current

External consultant and analyst for the Sahel and West Africa Club (SWAC). Spatial models, food economy, migration, science of cities, data and big data.

Emergency Attention Centre

Mexico City

Director in Strategic Analysis

2010-2013

(Centro de Atención a Emergencias y Protección Ciudadana de la Ciudad de México) Crime prediction models. Policing and police strategy design. Police allocation and resources optimisation. Evaluation models and systems.

Emergency Attention Centre

Mexico City

Deputy Director in Statistics

2010

(Centro de Atención a Emergencias y Protección Ciudadana de la Ciudad de México) Data analysis, crime statistics.

Consultoría Passel

Mexico City

Executive Consultant

2009

Finance analysis. Image analysis.

Science Communication.....

Punto Decimal Mx - General science communication media outlet

London

Founder and Editorial Director

2016-current

On-line science communication website. Fully available on-line www.puntodecimal.mx/

Chalkdust – Mathematics magazine

London

Founder and Editorial Director

2015-2018

Six editions published with 18,700 copies printed. Fully available on-line www.chalkdustmagazine.com with weekly articles.

Laberintos e Infinitos – Mathematics magazine

Mexico City

Editorial Director

2008-2009

Four editions published with 10,000 copies printed. Fully available on-line www.laberintos.itam.mx.

Publications

Vocational.....

- Prieto Curiel, R., Opinion Dynamics and the Inevitability of a Polarised and Homophilic Society. In Theory of Complexity-Definitions, Models, and Applications. IntechOpen (2021).
- Prieto Curiel, R., & González Ramírez, H. (2021). Vaccination strategies against COVID-19 and the diffusion of anti-vaccination views. *Scientific Reports*, 11.
- Prieto Curiel, R., Patino, J. E., Duque, J. C., & O'Clery, N. (2021). The heartbeat of the city. *Plos One*
- Prieto Curiel, R., Walther, O., & O'Clery, N. (2020). Uncovering the internal structure of Boko Haram through its mobility patterns. *Applied Network Science*.
- Prieto Curiel, R., Cresci, S., Muntean, C. I., & Bishop, S. R. (2020). *Crime and its fear in social media*. Palgrave Communications
- Cabrera-Arnau, C., Prieto Curiel, R., & Bishop, S. R. (2020). Uncovering the behaviour of road accidents in urban areas. *Royal Society Open Science*.
- Prieto Curiel, R., Cabrera Arnau, C., Torres Pinedo, M., González Ramírez, H. & Bishop, S. R (2019). A continuous binning for discrete, sparse and concentrated observations. *MethodsX*.
- O'Clery, N., Prieto Curiel, R. & Lora, E. (2019). Commuting times and the mobilisation of skills in emergent cities. *Applied Network Science*.
- Prieto Curiel, R., Cabrera Arnau, C., Torres Pinedo, M., González Ramírez, H. & Bishop, S. R (2019). Temporal and spatial analysis of the media spotlight. *Computers, Environment and Urban Systems*.
- Prieto Curiel, R., González Ramírez, H. & Bishop, S. (2018). How random is the location of a road accident?, *Plos One*
- Prieto Curiel, R., Pappalardo, L., Gabrielli, L. & Bishop, S. (2018) Gravity and scaling laws of city to city migration, *Plos One*
- Prieto Curiel, R. & Bishop, S. (2018), Fear of crime: the impact of different distributions of victimisation, Palgrave Communications
- Prieto Curiel, R. & Bishop, S. (2017), Modelling the fear of crime, *Proceedings of the Royal Society A* 473 (2203), 20170156
- Prieto Curiel, R., Collignon Delmar, S. & Bishop, S. (2017), Measuring the Distribution of Crime and Its Concentration, *Journal of Quantitative Criminology*, 1-29
- Prieto Curiel, R., Heinrigs P. & Heo I. (2017), Cities and Spatial Interactions in West Africa, *West African Papers*, No. 5, OECD Publishing, Paris
- Prieto Curiel, R. & Bishop, S. (2016), A metric of the difference between perception of security and victimisation rates, *Crime Science*, 5(1)
- Prieto Curiel, R. & Bishop, S. (2016), A measure of the concentration of rare events, *Scientific Reports*, 6
- Prieto Curiel, R. & Wilmer, S. (2016), *Muchas emergencias y aún más llamadas* Too many emergencies and even more emergency calls, *Miscelánea Matemática*, 59
- Prieto Curiel, R., Wilmer, S., Iniguez S. & Escalante M. (2013), *Análisis Criminal y el uso de cámaras de seguridad en la Ciudad de México* Crime Analysis and the usage of security cameras in Mexico City. Chapter in the book *Buenas Prácticas para el Análisis Delictual en América Latina* Good practices on crime analysis in Latinamerica, published in Santiago, Chile.
- Prieto Curiel, R. (2010), *El seno y coseno de una matriz*. Matrix sine and cosine, *Miscelánea Matemática*, 46

Science Communication.....

- Why we're adding Black Mathematician Month to our calendars, *The Guardian*, 2 October 2017

- In Conversation with Andrea Bertozzi, Chalkdust, 4, Autumn 2016
- Fractional Calculus: The Calculus of Witchcraft and Wizardry, Chalkdust, 3, Spring 2016
- ¿Por qué los delitos siempre ocurren en el mismo lugar? (Why does crime always occur in the same places?) Nexos Magazine, 2015
- In Conversation with Artur Avila, Chalkdust, 2, Autumn 2015
- Music Playlists, Facebook and Twitter, Chalkdust, 1, Spring 2015
- En redes te enredas (You got entangled in a net), Laberintos e Infinitos, 33, Autumn 2013
- Lorenz, Gini y muchos delitos (Lorenz, Gini and a lot of crimes), Laberintos e Infinitos, 28, Spring 2012
- Si te quieres volver millonario (If you want to become a millionaire), Laberintos e Infinitos, 25, Spring 2011
- Más spots, ¡menos votos! (More Spots, ¡Less Votes!, collaboration) Nexos Magazine, 380, Summer 2009
- La Ciencia detrás de un balón (The Science Behind a Ball), in collaboration with Prof Claudia Gómez Wulschner, Laberintos e Infinitos, 18, Summer 2009
- El Calendario, algo no tan uniforme ni tan universal (Calendar, Neither so Uniform nor so Universal), Laberintos e Infinitos, 15, Summer 2008
- La cuadratura del círculo (Squaring the Circle), Laberintos e Infinitos, 14, Spring 2008
- Límites geométricos (Geometric Limits), Laberintos e Infinitos, 14, Spring 2008

Other Publications.....

- Medidas de eficiencia y heurísticas de mejora de distribución de recursos (Measuring resources distribution and improving heuristics), Bachelors thesis Director, Summer 2013

Languages

Spanish: 100%

English: 100%

French: 40%

Computer skills

- R, Python, ArcGIS, Matlab

Awards

- Provost's Awards for Public Engagement (2017) - University College London student award nominee
- Andrew Rosen Prize - excellence in Applied Mathematics (2016), University College London, Mathematics Department (UCL)
- Certificate with Distinction in MSc in Statistics (2014), University College London, Statistics Department (UCL)
- Certificate with Distinction in Applied Mathematics (2009), Instituto Tecnológico Autónomo de México (ITAM)
- First Place in the Research Award Ex-Itam (2009), Instituto Tecnológico Autónomo de México (ITAM)
- Honorific Mention in the Sotero Prieto Prize (2009), Sociedad Matemática Mexicana (SMM)
- First Place in the Competition "Academia – AMAI" (2008), Asociación Mexicana de Agencias de Investigación de Mercados (AMAI)

Scholarships.....

- Abbott (Corte) Studentship (2017), University College London, Mathematics Department (UCL)
- Mayer de Rothschild Scholarship (2017), University College London, Mathematics Department (UCL)
- Edwin Power Scholarship (2017), University College London, Mathematics Department (UCL)

- SoBigData Research Scholarship (2017), Consiglio Nazionale delle Ricerche (CNR)
- Lighthill Scholarship (2016), University College London, Mathematics Department (UCL)
- JJ Sylvester Scholarship (2016), University College London, Mathematics Department (UCL)
- Sir George Jessel Scholarship (2016), University College London, Mathematics Department (UCL)
- Lighthill Scholarship (2015), University College London, Mathematics Department (UCL)
- Conacyt Scholarship (2013 - 2018), full funding, Consejo Nacional de Ciencia y Tecnología (CONACYT)