Nationality
French
Current home
Oxford, UK
Website
Personal

Édith Darin

Demography, Bayesian statistics and Geospatial data science

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Tech repo
Github
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OpenStreetMap
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Programming
OS Preferences
Windows
GNU/Linux
Statistical
Programming
R (+++)
Python (+)
Reporting
Microsoft Office
Latex
R Markdown
R Shiny

Languages
French native
English fluent
German intermediate
Italian intermediate

Education

2022-2025	**DPhil in Demography**	University of Oxford, UK

Topic: *Who knows population the best: the government, social media or satellite imagery? Estimating population with high spatial resolution to complement censuses in data-scarce contexts.* Affiliated with the Max Planck Institute for Demographic Research. St Catherine's college.

2018-2019	**MSc in Applied GIS and Remote Sensing**	University of Southampton, UK

Dissertation Topic: *Slumness Mapping: an insight comparing survey data and geospatial covariates. A Use Case in Kinshasa, DRC.* Featured in peer-reviewed article. Faculty Dean's MSc List Award.

2015-2018	**MSc in Statistics and Economics**

Paris Graduate School of Economics, Statistics and Finance (ENSAE), France
Statistics, Machine Learning, Computational Social Sciences.

2013-2014	**Double Bachelor's Degree in Economics and Sociology**

École Normale Supérieure de Cachan, Université Paris-I-Panthéon-Sorbonne, France
First class honours.

Working experiences

07/18	**Research Fellow**	WorldPop, University of Southampton, UK

Until 08/21 Specialist Research Technician
Building statistical models to provide up-to-date, spatially complete population count in data-scarce contexts. Predict and map population with high spatial resolution at the grid cell. Lead modeller for filling population gaps in censuses impacted by insecurity (Burkina Faso and Mali). Lead trainer on gridded population estimation to national statistics offices.
Methods developed: Hierarchical Bayesian modelling combining survey data with geospatial covariates. Random-forest models for producing high-resolution population estimates. Grid-based spatial sampling design for household surveys.

01/17-08/17	**Data Scientist Intern**	mVAM, UN World Food Program, Italy

Assessing food security from remote data collection. Machine-learning based propensity score weighting in complex survey design. Scoping study on high-resolution mapping of food security indicators. Panel attrition analysis. Descriptive statistics on mobile phone data. Support mission for Mali Country Office (Bamako).

07/16-12/16	**Data Scientist Intern**	Etalab, Governmental Task Force for OpenData, France

OpenFisca: French tax and benefit system micro-simulation platform. Finalist of the Open Government Partnership Hackathon (Paris Summit 2016).

02/15-03/15	**Economist Intern**	National Institute for Statistics, France

Micro-simulation model for studying the marginal effective tax rate.

Grants

12/2021	**Mapping refugees with high spatial resolution**	UNHCR: $80 000

Co-PI for developing methods to map refugees for survey purposes

Academic outcomes

Peer-reviewed papers

- The Population Seen from Space: When Satellite Images Come to the Rescue of the Census, **Darin, E.**; Kuépié M.; Bassinga H, Boo G., Tatem A.J.; *Population*, 2022, 77:3, ☑
- High-resolution population estimation using household survey data and building footprints, Boo, G; **Darin, E.**; Leasure, D.R.; Dooley, C.A.; Chamberlain, H.R., et al, *Nature Communications*, 2022, 13:1, ☑
- The role of earth observation in an integrated deprived area mapping "system" for low-to-middle income countries, Kuffer, M.; Thomson, D.R.; Boo, G.; Mahabir, R.; Grippa, T.; Vanhuysse, S.; Engstrom, R.; Ndugwa, R.; Makau, J.; **Darin, E.**; de Albuquerque, J.P. and Kabaria, C, *Remote Sensing*, 2020, 12, 982. ☑
- A grid-based sample design framework for household surveys, Boo G; **Darin E**; Thomson DR and Tatem AJ, *Gates Open Research* 2020, 4:13, ☑

Conferences

- Oral presentation: Estimating population in data-scarce contexts: to which extent can we leverage satellite imagery, **Darin E**, *British Society of Population Studies*, 2023.
- Oral presentation: Counting people from space: an inquiry from a data practitioner perspective, **Darin E**, *Data Justice Conference*, 2023.
- Oral presentation: A bottom-up population modelling approach to complement the population and housing census, **Darin E**; Boo G; Tatem AJ, *International Population Conference*, 2021. ☑
- Poster: How Bayesian modelling could use the Big Tech competition in producing built-up maps, **Darin E**, *Bayesian methods for the social sciences*, 2022. ☑
- Poster: High-resolution population mapping and estimation in the western part of the Democratic Republic of Congo, **Darin E**; Boo G; Leasure DL and Tatem AJ, *GEOMED 2019*, 2019. ☑

Teaching

- Gridded population modelling for Summer Institutes in Computational Social Science, Covenant, Nigeria 2022, Joseph Ki-Zerbo and Norbert Zongo University, Burkina Faso 2021, Data Science Nigeria Bootcamp 2019
- Statistical population modelling for census support; **Darin E**, Leasure DR, Tatem AJ, *WorldPop, University of Southampton*, 2021, ☑
- Small area population estimates using random forest top-down disaggregation: An R tutorial; Leasure DR, **Darin E**, Tatem AJ, *WorldPop, University of Southampton*, 2020. ☑.
- R Foundations Course for different Nigerian national agencies, 2020.
- Population Modelling Webinar, *GRID3 Webinar Series*, 2020. ☑

Datasets

- Census disaggregated gridded population estimates for Sierra Leone, version 2.0 (2015), WorldPop and Statistics Sierra Leone, 2021, *University of Southampton*, doi:10.5258/SOTON/WP00714. ☑
- Census-based gridded population estimates for Burkina Faso (2019), version 1.0, WorldPop and Institut National de la Statistique et de la Démographie du Burkina Faso, *WorldPop, University of Southampton*, 2021. ☑
- Modelled gridded population estimates for the Kinshasa, Kongo-Central, Kwango, Kwilu, and Mai-Ndombe provinces in the Democratic Republic of the Congo 2018, version 2.0, Boo G; **Darin E**; Leasure DR; Dooley CA; Chamberlain HR; Lazar AN; Tatem AJ, *WorldPop, University of Southampton*, 2020. ☑

R Package

- wopr: An R package to query the WorldPop Open Population Repository, version 1.0.1, Leasure DR; Bondarenko M; **Darin E**; Tatem AJ, *WorldPop, University of Southampton*, 2020. Maintainer: **Darin E.** ☑

Awards

- Three-year scholarship from the Leverhulme Centre for Demographic Research (3x32,000), 2022
- Faculty Dean's Prize for Research, University of Southampton, 2021
- Vice-Chancellor Award for Research Impact, University of Southampton, 2018