

Damien C. Jacques

TECHNICAL EXPERT - CONSULTANT · SUSTAINABLE DEVELOPMENT GOALS, GIS, REMOTE SENSING & DATA SCIENCE

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Holding a Ph.D. in Bioengineering and Agronomy, Damien is currently a consultant for the Inter-American Bank of Development and Dalberg Data Insights. He makes use of mobile phone data and Earth Observation data for GIS, machine learning and geostatistics analysis. His areas of research are food security, poverty, agricultural economics and academic publishing. He was awarded the Agriculture prize in the Data For Development challenge organized by Orange, MIT, and UN. He was an active member of Focus Research and Eurodoc as well as one of the founders of PhD Hub, the Belgian network for early career researchers. Besides, he is an active promoter of Open Science and Open Access.

Education

Université catholique de Louvain (UCL)

Louvain-la-Neuve, Belgium

PH.D. DEGREE IN AGRONOMY AND BIOENGINEERING

Jan. 2013 - May 2018

- Ph.D. Thesis: "Harnessing the Data Revolution for Food Security and Poverty Mapping: Synergies between Mobile Phone Data, Earth Observation and Official Statistics in Senegal"

Université catholique de Louvain (UCL)

Louvain-la-Neuve, Belgium

MASTER'S DEGREE IN BIOENGINEERING - ENVIRONMENT

Sept. 2010 - June 2012

- Main topics: GIS & Remote Sensing, Environmental Science, Territory Management ([see more](#)).
- Master Thesis in remote sensing in collaboration with GET Toulouse: "Dry vegetation monitoring in Sahel"

Université de Liège (ULg) - Gembloux Agrobiotech

Gembloux, Belgium

BACHELOR'S DEGREE IN BIOENGINEERING - ENVIRONMENTAL ENGINEERING

Sept. 2007 - June 2010

- Main topics: Agronomy, Environment, Mathematics and Physics, Stats, Engineering ([see more](#)).

Experiences

Dalberg Data Insights (DDI)

Brussels, Belgium

EXPERT CONSULTANT

February. 2019 - Now

- Develop internal tech expertise and poverty mapping lead.

Inter-American Development Bank (IDB)

Washington D.C., United States

CONSULTANT

Nov. 2018 - Now

- Poverty mapping using machine learning and mobile phone data in Nicaragua and El Salvador.

University of California, Los Angeles (UCLA)

Los Angeles, United-States

POSTDOCTORAL SCHOLAR

Sep. 2018 - Oct. 2018

- The impact of mobility (long-term migration from census data, short-term mobility from CDRs) on HIV prevalence in Africa.

Université Libre de Bruxelles (ULB)

Brussels, Belgium

RESEARCH ASSISTANT FOR THE SMARTPOP PROJECT

Apr. 2017 - Jan. 2018

- Dynamic population mapping and land use classification in Belgium using mobile phone data.

Université Catholique de Louvain (UCL)

Louvain-la-Neuve, Belgium

PHD CANDIDATE - F.R.S.-FNRS FRIA GRANT

Jan. 2013 - May 2018

- Involvement in international projects and consortium (JECAM, D4D, GEOGLAM, SIGMA...).
- Setting up successful research proposals (BELCAM, Sen2Agri).
- Communications at international conferences and workshops (CIMMYT, NetMob, AGU, CNES, GV2M...).
- Master thesis supervision and team work through collaborative research projects.

Université Catholique de Louvain (UCL)

Louvain-la-Neuve, Belgium

RESEARCH ASSISTANT FOR THE EUROPEAN LIFEWATCH PROJECT

Aug. 2012 - Dec. 2012

- Development of mapping facilities for the monitoring of European biodiversity ([see more](#)).
- Identification of the best approach to monitor and synthesize the ecosystem dynamic descriptors.

Research Projects & Activities

Data For Development (D4D)

D4D - Senegal

CHALLENGER AND DATA SCIENTIST

Dec. 2014 - Now

- Social challenge on Big Data organized by Orange in collaboration with UN and MIT followed by a research project that aims to implement the Data Revolution in Senegal ([video](#) - 4:58).
- [Agriculture Prize Winner \(2k\\$\)](#) + Bill & Melinda Gates Foundation grant Winner (45k\$).
- 2 research stays in Senegal: Meetings with local institutions (government, universities, international organizations...) & Field visit.

Data For Good (D4G)

Dalberg Data Insights

RESEARCHER & ADVISOR IN REMOTE SENSING ANALYSIS AND FOOD SECURITY

Jan. 2016 - Aug. 2016

- Collaborative research with the D4G team (now [Dalberg Data Insights](#)) of [Real Impact Analytics](#), a private company specialized in delivering analytics solution for the emerging market telecom industry.

Guru-Gis

www.guru-gis.net

CO-FOUNDER AND BLOGGER

2015 - Now

- Blog on GIS and Remote Sensing analysis
- Open software such as R, Qgis, OTB are most used in the examples.

Mapps Attack

Project description

CHALLENGER

2014

- Project developed for the NASA Space Apps Challenge (hackathon): Game Apps to crowd-source validation data for Land Cover maps.
- Most Inspiring Project Prize Winner of Liege's Challenge.

PhD Hub

www.phdhub.be

CO-FOUNDER

2014 - 2016

- PhD Hub is the Belgian Network for Early Career researchers that aims to connect Belgian researchers to each other.
- Organization of Social Events for Early Career researchers like PhD parties (100 - 250 p.).

Focus Research

www.focus-research.be

EFFECTIVE MEMBER

2014 - 2017

- Focus Research is the Belgian Research Policy Group that plays an active lobbying role.
- Publication of [The Research in Transition](#) Journal (20 000 copies) distributed in all the French-speaking universities of Belgium.

Eurodoc

www.eurodoc.net

BELGIAN DELEGATE FOR 2015 AGM IN ROMANIA

2014 - 2015

- The European Council of Doctoral Candidates and Junior Researchers, a federation of 32 national organisations of PhD candidates.
- Promotion of Open Access in the dedicated Working Group ([webinar organization](#), [paper writing...](#))

Entrepreneurship Projects & Activities

Food Porn Show

FPS teaser

CO-FOUNDER

Sept. 2015 - Dec. 2015

- Start-up project: delivery of 'all-in-one' gastronomical recipe kits

Stemgarden

www.stemgarden.co

CO-FOUNDER

2014

- Start-up project: [Indoor garden system in bamboo](#).
- Selected project for [BSE Academy](#): entrepreneurial training program of 3 months by Impulse Brussels (Certification).

Gotoro - PechaKucha

www.gotoro.be & www.pechakuchaliege.be

PECHAKUCHA CONFERENCES (20 SLIDES X 20 SEC) ORGANIZER

2015 - 2017

- Promote entrepreneurial spirit through the organization of PechaKucha (300 p.): [Knowledge Mutation](#), [Invisible Design](#), [Open Science](#).

Publications

Jacques, D. C. and Defourny, P. 2018. Accuracy requirements for early warning of crop production in Senegal. Royal Society Open Science. *Under Review*.

Jacques, D. C.. 2018. Mobile Phone Metadata for Development. arXiv preprint arXiv:1806.03086.

Fritz, S., See, L., Laso Bayas, J.C., Waldner, F., **Jacques, D. C.**, Becker-Reshef, I., Whitcraft, A., Baruth, B., Bonifacio, R., Crutchfield, J., Rembold, F., Rojas, O., Schucknecht, A., Van der Velde, M., Verdin, J., Wu B., Yan, N., Lianghzi, Y., Gilliams, S., Mucher, S., Moorthy, I., McCallum, I. 2018. A Comparison of Global Agricultural Monitoring Systems and Current Information Gaps. Agricultural Systems.

Jacques, D. C. 2018. Harnessing the Data Revolution for Food Security and Poverty Mapping: Synergies between Mobile Phone Data, Earth Observation and Official Statistics in Senegal. Doctoral dissertation, UCL-Université Catholique de Louvain.

Zufiria, P. J., Pastor-Escuredo, D., Ubada-Medina, L. A., Hernandez-Medina, M. A., Barriaes-Valbuena, I., Morales, A. J., **Jacques, D. C.**, Nkwambi, W., Diop, M. B., Quinn, J., Hidalgo-Sanchis, P., Luengo-Oroz, M. 2018. Identifying seasonal mobility profiles from anonymized and aggregated mobile phone data. Application in food security. Plos One, 13(4): e0195714.

Jacques, D. C., Marinho, E., d'Andrimont, R., Waldner, F., Radoux, J., Gaspart, F., and Defourny, P. 2017. Social capital and transaction costs in millet markets. Heliyon, 4(1).

Pokhriyal, N.* and **Jacques, D. C.*** 2017. Combining disparate data sources for improved poverty prediction and mapping. Proceedings of the National Academy of Sciences, 114(46):E9783 – E9792.

Tennant, J. P.*, Dugan, J. M.*, Graziotin, D.*, **Jacques, D. C.***, Waldner, F.*, Mietchen, D.*, Elkhatib, Y.*, Collister, L. B.*, Pikas, C. K.*, Crick, T.*, et al.*. 2017. A multi-disciplinary perspective on emergent and future innovations in peer review. F1000Research, 6.

Radoux, J.* , Chomé, G.* , **Jacques, D. C.*** , Waldner, F.* , Bellemans, N.* , Matton, N.* , Lamarche, C.* , d'Andrimont, R.* , and Defourny, P. 2016. Sentinel-2's Potential for Sub-Pixel Landscape Feature Detection. Remote Sensing, 8(6):488.

Tennant, J. P.*, Waldner, F.*, **Jacques, D. C.***, Masuzzo, P.*, Collister, L. B.*, and Hartgerink, C. H.* 2016. The academic, economic and societal impacts of Open Access: an evidence-based review. F1000Research, 5.

Ardekani, M. R. M., **Jacques, D. C.**, and Lambot, S. 2016. A Layered Vegetation Model for GPR Full-Wave Inversion. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 9(1):18–28.

Renier, C., Waldner, F., **Jacques, D. C.**, Babah Ebbe, M. A., Cressman, K., and Defourny, P. 2015. A dynamic vegetation senescence indicator for near-real-time desert locust habitat monitoring with MODIS. Remote Sensing, 7(6):7545–7570.

Jacques, D. C., Kergoat, L., Hiernaux, P., Mougin, E., and Defourny, P. 2014. Monitoring dry vegetation masses in semi-arid areas with MODIS SWIR bands. Remote Sensing of Environment, 153:40–49.

Jacques, D. C., Marinho, E., d'Andrimont, R., Waldner, F. and Radoux, J. 2015. Genesis of millet prices in Senegal: The role of production, markets and their failures. Fourth Conference on the Analysis of Mobile Phone Datasets, NetMob 2015 (MIT Media Labs, Boston).

Ardekani, M. R., Neyt, X., Nottebaere, M., **Jacques, D. C.** and Lambot, S. 2014. GPR data inversion for vegetation layer. 15th International Conference on Ground Penetrating Radar (GPR) (Square Brussels Meeting Centre, Brussels).

*contributed equally to this work

Skills & Interests

Languages: French (native speaker), English (professional capabilities).

Technical Skills: Data analysis (R, python - ranked 4th at 2018 McKinsey Hackathon "Hacking for impact"), GIS and remote sensing (QGIS, ArcGis, OTB...), ~~TeX~~ LaTeX, Linux, Wordpress, Gimp...

Activities: Climbing, Guitar, Running, Squash, Scouting (5 years as chief scout).

Personal Skills: Curiosity, Team Player, Hard Worker, Flexible, Determined, Initiative, Responsible.