

Dr Didier G. Leibovici

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French Nationality

<https://www.linkedin.com/in/didiergleibovici/>
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Interests geocomputational data analytics / statistical machine learning / geolocated information modelling / interoperability for data and processes / scientific workflows & web services

Features interaction & association / fusion / meta-information / quality & error propagation

Applied in agro-ecological modelling / epidemiology & public health / crowdsourcing & Volunteered Geographical Information (VGI) for environment & society domains

My research profile is in geocomputational data analytics of spatial information with data modelling and statistical analysis, which has developed from my academic experience in both France and the UK dealing with spatio-temporal data from different contexts, such as: spatial epidemiology, agro-ecological monitoring, dynamics of population studies and location based citizen crowdsourcing of environmental information

My approach draws from my dual competency in statistics and computing science, with a focus on providing appropriate methods to manage and analyse large datasets from various heterogeneous sources within an interdisciplinary approach.

My research themes are at the intersection of geospatial information science, data mining, computing methodologies and open technologies; I am particularly interested in challenging the potential of interoperability developments. Computing science linked to semantic modelling (e.g. ontologies) or computational architecture (e.g. workflow architectures) supports the data analysis methods I utilise, including multiway methods and spatial statistics of geo-located information for environmental and social studies, which are equally useful for information modelling and retrieval.

My focus is driven by bringing quantitative methods involving a geo-spatio-temporal dimension into the methodological context studied. I focus on data information interaction, extraction and associations generated from spatio-temporal multi-attribute analysis within integrated assessment modelling approaches. I consider that meta-information (e.g. provenance, uncertainty and data quality) is crucial in the design of systems using geocomputational data analytics to acquire knowledge and to support decision-making.

Qualifications

Masters in Information Technology at the University of Montpellier II (awarded 2002)

grade 77%

Project: *'Metadata Structure relative to Data and Protocols'* in the CIRAD-Forest Department CIRAD-Montpellier spring 2002

Industrial placement: *'Developing a GIS extension for a Local Environmental Information System'* IRD/Maison de la Télédétection, Montpellier summer 2002

PhD in Applied Mathematics at the University of Montpellier II (awarded 1993)

Speciality in Biostatistics: grade *'très honorable'*

'Multidimensional and Multiway Methods for Repeated Measures Factors Analysis: Applications in Longitudinal Epidemiological Studies'

Master of Research in Mathematics, University of Montpellier II (awarded 1988)

Option: Statistics & Data Analysis, dissertation: *'Data Analysis with covariates structure'*

Undergraduate and Master's Degree in Mathematics –4 years French 'Maitrise', University of Montpellier II (awarded 1987)

Professional Experience

2013 - 2017 Senior Research Fellow in Geocomputational Data Analytics

Nottingham Geospatial Institute/ school of Geography, University of Nottingham, UK

Crowdsourcing /error propagation/ spatio-temporal pattern analysis / interdisciplinary integrated modelling / cross-scales and multi-scale problems / data quality, interoperability with OGC (Open Geospatial Consortium) and web services issues related to these interests / UNOTT scientific lead for an FP7 project (COBWEB) and a BBSRC project (GRASP-GFS), FP7 LandSense

2012- 2013 Research Fellow in Geocomputational Statistical Analysis

Centre for Computational Geography/ School of Geography, University of Leeds , UK

Pursuing previous activities in the context of social simulation modelling

2006 - 2012 Research Fellow in Geospatial Modelling & Analysis

Centre for Geospatial Science/Nottingham Geospatial Institute/ school of Geography, University of Nottingham, UK

Spatio-temporal modelling / interdisciplinary integrated modelling / cross-scales and multi-scale problems / data quality, OGC (Open Geospatial Consortium) and web services issues related to these interests / teaching on MSc in GIS / UNOTT scientific co-lead on FP7 EuroGEOSS

2002 - 2006 Researcher in Geoinformatics & GIS Modelling

'Desertification' Unit, IRD- (Research Institute for Development, France)

Interdisciplinary research for analysis of prospective modelling / agro-ecological modelling / statistical contributions to satellite images clustering / conception and implementation of exploratory and prospective GIS ecological landscape modelling to build desertification risk indicators / teaching and training in GIS

1999-2001 Research Fellow in Statistics & Image Analysis

FMRIB centre, University of Oxford, UK

Image and time series analysis of functional MRI data / linear and smooth modelling for multi-subject multi-group studies / mixed GLM and exploratory multiway data analysis / random fields theory, permutation and bootstrapping testing / re-writing of PTAK multiway method (Leibovici 1997) in R language, optimisation with non-identity metrics and smooth components

1997-1999 Statistician Researcher

Sanofi-Recherche, Division of Biostatistics, Montpellier, France

Modelling multiway data in quantified-EEG pharmaco-dynamic phase IIa studies / Partial Least Squares approaches to include pharmaco-kinetic measures / packaging SAS functions with macro SAS/macro, SAS/IML, SAS/Stat and SAS/Graph for PCA with constraints generalisations and extensions

1995-1996 Research Fellow

Department of Computing and Mathematical Sciences, University of Greenwich, UK

Theoretical aspects of multiway data modelling in 'smooth' spaces / analysis of multiway contingency table methods / teaching of statistics using SAS/Stat

1994-1995 Post-Doctorate Researcher

Department of Epidemiology and Public Health, University of Leicester, UK

Grant from INSERM (l'Institut National de la Santé et de la Recherche Médicale, France)

longitudinal analysis and cognitive decline risk factors / clustering methods, logistic regression, ordinal data and cognitive measures / SAS/Stat, S-plus, SPSS

1990-1994 Associate Researcher

'Epidemiology of ageing and disability' INSERM Montpellier, France and within the 'Ageing and Cognition' team.

HIV+ follow-up study, analyses using tensorial extension of PCA, repeated measures ANOVA/MANOVA combined with multidimensional analysis / health indices properties (quality of life, disability index) / spatial statistics for asthma time series / cognitive decline analyses using correspondence analysis, clustering methods and logistic regression / using SAS/Stat, SAS/Graph, Excel macros.

Research Activities

Methodologies

- Geographic Information Systems & Spatial Data Infrastructure
- Integrated Spatial Modelling, spatial algorithms, *e.g.* in agro-ecology
- Geospatial workflow modelling
- Data quality, error propagation, metadata
- Change of scale, cross-scale, multiscale
- Statistics for geospatial interactions (attributes, geometries)
- Interoperability in geospatial modelling, *e.g.* use of OGC standards
- Multivariate (Spatial) statistics, *e.g.* in epidemiology and medical research
- GeoSpatio-temporal data mining & statistics
- Longitudinal studies and multidimensional and/or multivariate analysis
- Extension of information theory from co-occurrences distributions
- ensemble type estimation, *e.g.* bagging, random forest with CART
- Multiway tensorial analysis for discrete or continuous data

Grants and funding

- 2016-2020** EU H2020 SC5-17-20151 'A Citizen Observatory and Innovation Marketplace for Land Use and Land Cover Monitoring, *LandSense*', Nottingham partner, €343k (€5.6M 18 partners)
My Role: Researcher until 2017 (continuation of my work from COBWEB on Quality Assurance for crowdsourced and citizen science data used in the LandSense proposal)
- 2012-2016** EU FP7 ENV.2012.6.5-1 Developing community-based environmental monitoring and information systems using innovative and novel earth observation applications '*COBWEB*', Nottingham partner, €486k (€6.5M, 13 partners)
My Role: Researcher co-Investigator (col), scientific lead for Nottingham & WorkPackage (Nottingham contribution based on my work data Quality Assurance)
- 2013-2014** BBSRC TDRF call 2 Support for Development of Bioinformatic Tools and Computational Approaches to the Biosciences 'Geospatial Resource for Agricultural Species and Pests with integrated workflow modelling to support Global Food Security (GRASP-GFS): a prototype', Nottingham, £150k
My Role: Researcher Principal Investigator (PI) writing up the whole proposal
- 2009-2012** EU FP7 ENV.2008.4.1.1.1: European Environment Earth Observation system supporting INSPIRE (INfrastructure for SPatial InfoRmation in the European community) and compatible with GEOSS (Global Earth Observation System of Systems), '*EuroGEOSS*', Nottingham partner €620k (€7M, 23 partners)
My Role: Researcher col and scientific lead for Nottingham (contribution in writing-up proposal)
- 2008-2011** EU FP7 ENV-2007-1: Regional pilot platform as EU contribution to a Global Soil Observing System '*eSoTer*', Nottingham partner €81k (€2.7M, 14 partners)
My Role: Researcher PI, managing the Nottingham team, writing up Nottingham's contribution
- 2011** University of Nottingham /Global Food Security Projects, '*GRASP*' project (Open Source based Geospatial Resource for Agricultural Species and Pests) £10k **My Role:** Researcher-co-PI
- 2009** EU FP7 e-content+ project '*GIS4EU*': GIS data harmonisation for Europe, and EU FP7 collaborative '*GIGAS*': 'GEOSS, INSPIRE, GMES, Action in Support' for convergence of the initiatives'
My Role: participating as internal consultant
- 2009** University of Nottingham / Bridging the Gaps Awards '*Geospatial mash-up technologies in Health and disease mapping*', £3k **My Role:** Researcher-co-PI
- 2005-2010** EU FP6 Global Changes & Ecosystem DeSurvey, IRD €250k (€10.3M, 39 partners)
My Role: Researcher until 2006, doing GIS coupling-models integration, training for partners (some contribution to writing up the proposal)
- 1994-1995** Post-Doctoral Training fellowship INSERM (France)-Dept Public Health University of Leicester, UK
My Role: post-doc fellow writing up the proposal
- 1994-1994** Visiting Fellowship 4 months, Dept of Statistics, University of Montreal, Canada

My Role: Visiting Researcher (writing up a short proposal)

1990-1993 *Doctoral grant from ANRS (National Research Association on AIDS)*

My Role: PhD student contribution in writing up the doctoral grant

Consultancies

2012-2015 FP7 CNECT- ICT project reviewer (each year) **Dem@care** (AAL, patients with Dementia)

2001- ... Regular reviewer for journal articles and conferences (SDI, GIS, Statistics, GeoInformation and Geosciences), e.g. *Computers & Geosciences*, *Environmental Modelling & Software*, *IEEE Geosciences & Remote Sensing* (journal and IGARSS), *Remote Sensing of the Environment*, *Sensors*, *Applied Statistics*, *Land Degradation & Development*, *journal of LBS and GISRUK conferences*, *FOSS4G conferences*

2001- ... Regular reviewer for project funding bodies, e.g. RCUK (ESRC, MRC, EPSRC), European FP7 SME for Health, Fond National de la Recherche (Luxembourg) and Research Office Cyprus & Regional European Fund (CYP)

1996-1999 '*Dietary Habits and the Heartbeat Scheme*', project led by Dr M Holdsworth University of Leicester, UK

1995-1999 '*Clinical and epidemiological approaches to neurodegenerative disease*', Longitudinal analysis and risk factors in clinical epidemiology of cognitive decline, INSERM Montpellier, France,

1994 Contribution to the study 'The secret of Centenarians' laboratory IPSEN

1992-1993 '*Migraine questionnaires on causes and consequences of migraine for the Interdisciplinary group on Migraine*', GRIM, France

Member of Board of Editors & programme committee

SAGEO 2014, OSGIS 2010-13, FOSS4G 2013, ISSDQ 2015, AGILE 2013-2015

2013- ... International Journal of Geomatics and Spatial Analysis,

Prizes & Awards

2016 *Runner-up* Best paper award AGILE 2016 conference, Helsinki (co-author)

2012 Best paper award 2011 in *International Journal of Image and Data Fusion* (1st author)

2011 GISRUK 2011 Southampton, best Spatial Analysis conference paper award (co-author)

2010 GISRUK 2010 London, best Spatial Analysis conference paper award (1st author)

1994-1995 Post-doctoral training award, INSERM

1994 Visiting Fellowship at the Department of Mathematics & Statistics, University of Montreal, Canada (4 months during 1994)

1994 IPSEN Prize for Young Researcher on Alzheimer's disease

Teaching activities

Teaching qualifications

2008 & 2011 ILTP (Intensive Learning and Teaching Programme) certificate: *Foundations of Teaching in HE, Lecturing for learning, small group Teaching, Presentation Skills, Assessment and Feedback, Teaching a Diverse Audience*, obtained at the University of Nottingham

Lectures/Seminars/Training sessions

2007-2011 Lectures and practical sessions within the 'Management of geospatial data & modelling' module, for an MSc in GIS, University of Nottingham

2004-2006 Lectures and tutorials in GIS on the Masters at University of Montpellier: spatial analysis and spatial operators; theory and applications with ArcGIS and PostGIS

2003-2005 Training sessions for ROSELT network researchers: modelling using GIS and the extension to ArcGIS developed for the network, Montpellier

1999-2001 Training Seminars for PhD students and post-doctoral researchers in neurosciences: linear model and fMRI (functional imaging) multi-subjects, University of Oxford

1995-1996 Lectures and practical session on the MSc Applied Statistics, module on Multivariate methods, University of Greenwich

Student Supervision

5 Masters 5 PhD

2014-2017	PhD co-supervision in 'Modelling crop diseases for food security' Masoud Al-Azri	Agriculture Science
2014-2017	PhD co-supervision in 'Geospatial genetic-trait variations in agriculture' Roberto Santos	Geospatial Science & Geography
2013	MSc co-supervision in 'Scarlet fever and children evacuations WWII ' Abel Kusemererwa	Health Geography
2013-2016	PhD co-supervision in 'Quality assessment in crowdsourcing for agriculture' Chi Dai Huynh	Geospatial Science
2010-2013	PhD co-supervision in 'Science 'Dynamic Model-based Validation of Crowd-sourced Data' (application in Health & Environment) Sergiusz Pawlowicz	Geospatial Science
2007-2011	PhD co-supervision in 'Integrating nutrition and sustainability in UK food and health policy' Angie Clonan	Public Health Nutrition
2006	Masters co-supervision in 'Contribution to Pastoral activity modelling within LEIS' Sarah Perdutre	Environment Management
2005	Masters supervision in 'A migrating tool for the ROSELT/LEIS database'	Computing Science
2005	Masters co- supervision in 'ROSELT observatories representativeness in the circum-saharian zone: ecoregion clustering'. Gilles Quillevere	Geomatics
2004	Masters co- supervision in 'Automatic metadata profile specific production with ArcCatalog for XML'	Geomatics

Software Skills

- *Geomatic/GIS/web services*
R, OSGeo suite (OGC services), ArcGIS (ArcObjects Programming)
- *Computational Statistics*
R, SAS, and S-plus
- *Information Systems*
UML, BPMN, Merise; SQL on DBMS Oracle, PostGres/PostGIS, MySQL, O2, Access; XML
- *Programming*
R, Python, Perl, C++, Java, javascript, VB and php
- *Systems (OS)*
Mac OS X and Unix/Linux, Windows

Other skills and interests

- Native French, fluent English (written and spoken), basic in Spanish
- Cinema, jazz music, chess
- Hiking, tennis, sailing, golf

Publications

**41 peer reviewed articles (18 in the last 5 years, 19 as first author,
13 as first author/25 papers of the last 10 years)**

20 extended abstracts

8 book chapters

35 academic conferences

25 lay press, reports, workshops and software

[Google Scholar link to Dr Didier G. Leibovici](#)

Peer reviewed articles

- 41** Leibovici DG, Williams J, Rosser JF, Hodges C, Chapman C, Higgins C, and Jackson MJ (2017) Earth Observation for Citizen Science validation, or, Citizen Science for Earth Observation validation? The Role of Quality Assurance of Volunteered Observations. *Data*, **2(4)**, 35; **special issue "Open Data and Robust & Reliable GIScience"** http://www.mdpi.com/journal/data/special_issues/open_data (accepted Oct 2017)
- 40** Farguette M, Simon H, Raouani H, Kadri Zara M, Loireau M, Libourel T, Sghaier M and Leibovici DG (2017) Modelling the cropping system diversity, from observation to detection: the case of Nefta Oasis, Djerid, Tunisia. *Cahiers de l'Agriculture* (accepted July 2017)
- 39** Leibovici DG, Anand S, Santos R, Al-Azri M, Mayes S, Ray R, Baten A, King G, Karunaratne AS, Azam-Ali S, and Jackson MJ (2017) Geospatial binding for transdisciplinary research in crop science: the GRASP-GFS initiative (Geospatial Resource for Agricultural Species, pests and Pathogens with integrated workflow modelling to support Global Food Security). *Open Geospatial Data, Software and Standards*, **2:20**
- 38** Leibovici DG, Rosser JF, Hodges C, Evans B, Jackson MJ, and Higgins C (2017) On Data Quality Assurance and Conflation Entanglement in Crowdsourcing for Environmental Studies. *ISPRS International Journal of Geo-Information, special issue on 'Volunteered Geographical Information'*, **6(3)**, 78
- 37** Rosser JF, Leibovici DG and Jackson MJ (2017) Rapid flood inundation mapping using social media, remote sensing and topographic data. *Natural Hazards*, **87.1 (2017): 103-120**
- 36** Higgins CI, Williams J, Leibovici DG, Simonis I, Davis MJ, Muldoon C and O'Grady M (2016) Citizen OBServatory WEB (COBWEB): A Generic Infrastructure Platform to Facilitate the Collection of Citizen Science data for Environmental Monitoring. *IJSDIR*, **11: 20-48**
- 35** Meek S, Jackson MJ and Leibovici DG (2016) A BPMN solution for chaining OGC services to quality assure location-based crowdsourced data. *Computers & Geosciences*, **87: 76-83**
- 34** Leibovici DG, Brosset D, Claramunt C and Jackson MJ (2015) k-Co-occurrences Density Map Estimation. *Spatial Statistics 2015: Emerging Patterns, Procedia Environmental Sciences*. **26, 105–109**
- 33** Stock K, Leibovici DG, DeLazari L and Santos R (2015) Discovering Order in Chaos: Using a Heuristic Ontology to Derive Spatio-Temporal Sequences for Cadastral, Roads and Parks Data. *Spatial Cognition & Computation*, **15(2): 115-141**
- 32** Leibovici DG and Birkin MH (2015) On Geocomputational Determinants of Entropic Variations for Urban Dynamic Studies. *Geographical Analysis*, **47 (3): 193-218**
- 31** Clonan A, Wilson P, Swift JA, Leibovici DG and Holdsworth M (2015) Red and Processed Meat Consumption and Purchasing Behaviours and Attitudes: Impacts for Human Health, Animal Welfare and Environmental Sustainability. *Public Health Nutrition*, **18 (13), 2446–2456**
- 30** Loireau M, Sghaier M, Guerrero B, Chouikhi F, Fétoui M, Leibovici DG, Debarb S, Desconnets J-C and Ben Khadra N (2015) SIEL : système pour l'évaluation du risque de désertification. *Revue d'Ingénierie des Systèmes d'Information :Special issue 'Nouvelles avancées en Systèmes d'Information pour l'Environnement: nouvelles avancées*, **20 (3): 117-142**
- 29** Samarasundera E, Hansell A, Anand S, Leibovici DG, Oppenheimer C and Horwell C (2014) Geological Hazards: from Early Warnings Systems to Public Health Toolkits. *Health & Place*, **30: 116-119**
- 28** Leibovici DG, Claramunt C, Le Guyader D and Brosset D (2014) Local and global spatio-temporal entropy indices based on distance-ratios and co-occurrences distributions. *International journal of Geographical Information Science*, **28(5): 1061-1084**

- 27 Leibovici DG, Pourabdollah A and Jackson MJ (2013) Which Spatial Data Quality can be meta-propagated? *Journal of Spatial Sciences*, **58(1): 3-14**
- 26 Pourabdollah A, Leibovici DG, Simms DM, Tempel P, Hallett SH and Jackson MJ (2012) Towards a Standard for Soil and Terrain Data Exchange: SoTerML. *Computers & Geosciences* **45: 270-283**
- 25 Du H, Anand S, Alechina N, Morley J, Hart G, Leibovici DG, Jackson JM and Ware JM (2012) Geospatial Information Integration for Authoritative and Crowd Sourced Road Vector Data. *Transactions in GIS*, **16(4): 455-476**
- 24 Clonan A, Holdsworth M, Swift J, Leibovici DG and Wilson P (2012) The dilemma of healthy eating and environmental sustainability: the case of fish. *Public Health Nutrition*, **15(2):277-284**
- 23 Leibovici DG and Jackson MJ (2011) Multi-scale Integration for Spatio-Temporal Ecoregioning Delineation. *International Journal of Image and Data Fusion*, **2(2): 105-119**
- 22 Leibovici DG, Bastin L, Anand S, Hobona G and Jackson MJ (2011) Spatially Clustered Associations in Health related geospatial data. *Transactions in GIS*, **15(3): 347-364**
- 21 Leibovici DG, Bastin L and Jackson MJ (2011) Higher-Order Co-occurrences for Exploratory Point Pattern Analysis and Decision Tree Clustering on Spatial Data. *Computers & Geosciences*, **37(3): 382-389**
- 20 Leibovici DG (2010) Spatio-temporal Multiway Decomposition using Principal Tensor Analysis on k-modes: the R package PTak. *Journal of Statistical Software*, **34(10), 1-34**.
<http://www.jstatsoft.org/v34/i10/>
- 19 Leibovici DG (2009) Defining Spatial Entropy from Multivariate distribution of Co-Occurrences. *In: Lecture Notes in Computer Science, Spatial Information Theory Volume 5756/2009*, **392-404**
- 18 Loireau M, Sghaier M, Fetoui M, Ba M, Abdelrazik M, d'Herbès J-M, Desconnets J-C, Leibovici DG, Debarb S and Delaître E (2007) Système d'Information sur l'Environnement à l'échelle locale (SIEL) pour évaluer le risque de désertification : situations comparées circum-sahariennes (réseau ROSELT) *Sècheresse*, **18(4): 328-35**
- 17 Leibovici DG, Quillevere G and Desconnets J-C (2007) A method to Classify Ecoclimatic Arid and Semi-Arid Zones in Circum-Saharan Africa Using Dynamics of Multiple Indicators. *IEEE Transaction in Geoscience And Remote Sensing*, **45(12), 4000-4007**
- 16 Loireau M, d'Herbès J-M, Leibovici D, Desconnets J-C and Granouillac B (2006) An ICS for desertification monitoring in Africa Circum-Saharan zone: focus on one of its components, the SIEL-ROSELT. *In Seminar Proceedings: Role of Information Circulation Systems in scientific and practical approaches to combat desertification / AIDCCD Windhoek and Ondangwa, Namibia, 2-7 April 2006: pp 81-92*
- 15 Loireau M, Leibovici DG, Desconnets J-C and d'Herbès J-M (2005) LEIS, a Tool for Diagnosis and Prevision of Antropogene Pressure on Natural Vegetation. *In: RGLDD (Remote Sensing and Geoinformation Processing in the Assessment and Monitoring of Land Degradation and Desertification) 2005, Trier (Germany)*
- 14 Estienne F, Matthijs N, Ricoux P, Leibovici DG and Massart DL (2001) Multi-Way Modelling of High-Dimensionality Electro-Encephalographic Data. *Chemometrics and Intelligent Laboratory Systems*, **58, issue 1: 59-72**
- 13 Leibovici D, Ritchie K and Touchon J (1999) The effects of alcohol and tobacco consumption on different aspect of cognitive performance in the elderly: a longitudinal study of relative risk *International Journal of Epidemiology* **28:77-81**
- 12 Leibovici D and Sabatier R (1998) The Singular Value Decomposition of a k-ways array for a Principal Component Analysis of multi-way data, the PTA-kmodes. *Linear Algebra and its Applications* **269: 307-329**
- 11 Leibovici D and El Maache H (1997) A Singular Value Decomposition of an element belonging to a Tensor Product of K Separable Hilbert Spaces. *Compte Rendus de l'Académie des Sciences tome 325, série I, Statistiques (Statistics) / Probabilités (Probability Theory) : 779-782*
- 10 Ritchie K, Touchon J, Ledesert B, Leibovici D and Dupuy-Gorce A-M (1997) *Establishing the limits and characteristics of normal age-related cognitive decline*. *Revue d'Épidémiologie et de Santé Publique* **45 n°5 :373-381**
- 9 Holdsworth M, Haslam C, Raymond NT and Leibovici D (1997) An Evaluation of the Heartbeat Award Scheme in Public Eating Places : the Customers Perspective. *Journal of Nutrition Education* **29,5, Sept-Oct: 231-236**
- 8 Ritchie K, Leibovici D, Ledesert B and Touchon J (1996) A typology of sub-clinical senescent cognitive disorder. *British Journal of Psychiatry*, **168:470-476**
- 7 Leibovici D, Ritchie K, Ledesert B and Touchon J (1996) Does Education Level Determine the Course of Cognitive Decline? *Age and Ageing* **25:392-397**

- 6 Leibovici D, Curtis S and Ritchie K (1995) Application of disability data from epidemiological survey to the development of indicator of service needs for the dependant elderly. *Age and Ageing*, **24:14-20**
- 5 Ritchie K, Leibovici D, Ledesert B and Touchon J (1995) Changement cognitif léger chez des personnes âgées normales : vieillissement normal ou pathologie sous-clinique. *Nervure*, **VIII(9),11-19**
- 4 Leibovici D and Ritchie K (1995) Heterogeneity in senile dementia and cognitive ageing. *Alzheimer's Research* **1,17-22**
- 3 Cadet B, Robine J-M and Leibovici D (1994) Dynamique de la mortalité Asthmatique en France : Fluctuations saisonnières et Crise de mortalité en 1985-1987. *Revue d'Épidémiologie et de Santé Publique*, **42 no2, 103-118**
- 2 Bucquet D, Deveau C, Belanger F, Boufassa F, Desmoulins C, Jadand C, Carre N, Leibovici D, Vilde J-L, Rouzioux C, Spira A and the SEROCO committee (1993) Cohorte Française multicentrique d'adultes infectés par le VIH : Description et évolution après 4 ans de suivi. *Presse Médicale de France*, **23 (27):1247-1251**
- 1 Cadet B, Robine J-M and Leibovici D (1993) Le passé et le présent de la mortalité asthmatique : vers une rupture de la tendance séculaire? *Revue d'Épidémiologie et de Santé Publique*. **41 no5, 363-373**

Extended abstracts

- 20 Gardner Z, Leibovici DG, Basiri A, and Foody G (2017) Trading-off location accuracy and service quality: privacy concerns and user profiles. in: **IEEE proceedings of the International Conference on Location and GNSS, ICL-GNSS 2017 conference, 27-29 June 2017, Nottingham, UK.**
- 19 Santos R and Leibovici DG (2017) On a Mantel-Test Extension for k Series of Distances and Related k-Way Multivariate Methods. **2017 International Conference on GeoComputation: Celebrating 21 Years of GeoComputation, 4th-7th September 2017, Leeds, UK**
- 18 Leibovici DG and Rosser J(2016) Multiway sensitivity analysis of the fusion of earth observation, topography and social media data for rapid flood mapping. **Spatial Accuracy, 12th International Symposium, 5-8 July 2016, Montpellier, France.**
- 17 Rosser J, Pourabdollah A, Brackin R, Jackson MJ and Leibovici DG (2016) Full Meta Objects for Flexible Geoprocessing Workflows: profiling WPS or BPMN? **19th AGILE Conference, Helsinki, Finland, 14-17 June 2016.**
- 16 Higgins CI, Williams J, Leibovici DG, Simonis I, Davis MJ, Muldoon C and O'Grady M (2016) Citizen OBServatory WEB (COBWEB): A Generic Infrastructure Platform to Facilitate the Collection of Citizen Science data for Environmental Monitoring. **European Citizen Science Association, ENVIP'2015 workshop, 8 pages**
- 15 Wiemann S, Meek S, Chapman C, Leibovici DG, Jackson M and Lars B (2015) Service-based combination of quality assurance and fusion processes for the validation of crowdsourced observations. **AGILE 2015, Lisboa, Portugal, 9-12 June 2015.**
- 14 Leibovici DG, Evans B, Hodges C, Wiemann S, Meek S, Rosser J and Jackson MJ (2015) On Data Quality Assurance and Conflation Entanglement in Crowdsourcing for Environmental Studies. **International Symposium on Spatial Data Quality (ISSDQ 2015), 29-30 September 2015, La Grande Motte, France, 4 pages' abstract.** IPRS archive
- 13 Leibovici DG, Daras K and Turner AGD (2014) Competing Spatial Optimisation using the k-spatial entropy. **GIScience 2014, Eight International Conference on Geographical Information Science, Vienna 23-24 September**
- 12 Huynh Chi D, Vu T, Jackson M, Leibovici DG and Mayes S (2014) Towards a User-Centric Approach for Assessing Quality of Crowd-Sourced Data, an Application in Agriculture. **Role of Volunteered Geographic Information in Advancing Science: Effective Utilization: Workshop GIScience 2014, Eight International Conference on Geographical Information Science, Vienna 23-24 September**
- 11 Hodges CJ, Leibovici DG and Ties SF (2014) Building confidence in crowdsourced data for biological monitoring and policy making as part of FP7 Project COBWEB. **Role of Volunteered Geographic Information in Advancing Science: Effective Utilization: Workshop, GIScience 2014, Eight International Conference on Geographical Information Science, Vienna 23-24 September**
- 10 Meek, S. Jackson, M. and Leibovici, DG. (2014) A flexible framework for assessing the quality of crowdsourced data. **AGILE conference, 3-6 June 2014, Castellon, Spain**
- 9 Leibovici DG and Jackson MJ (2013) Copula metadata est. **AGILE conference, 14-17 May 2013,**

Leuven, Belgium

- 8 Leibovici DG and Birkin MH (2012) Entropic variations of urban dynamics at different spatio-temporal scales: geocomputational perspectives. **NARSC-RSAI November 2012, Ottawa, Canada**
- 7 Leibovici DG, Foody GM and Boyd D (2010) Spatial entropy for the measurement of the spatial accuracy of classified remote sensing imagery at multiple scales. **Accuracy, July 2010, Leicester, UK**
- 6 Leibovici DG, Hobona G, Stock K and Jackson MJ (2009) Qualifying geospatial workflow models for adaptive controlled validity and accuracy. **In: IEEE proceedings Geoinformatics August 2009, USA, pp. 1-5**
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- 4 Leibovici DG and Jackson M (2008) Multiscale Integration for Spatio-Temporal Ecoclimatic Ecoregioning Delineation. **In: Geoscience and Remote Sensing Symposium, 2008. IGARSS 2008. IEEE International. Vol 3, III-996-III- 999.**
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