David S. Lamb, Ph.D.

davidlamb.github.com

Summary of Qualifications:

Quantitative Geographer with over 10 years experience in industry and academic settings.

- Background in GIS, cartography, and visualization methods in applied and research settings.
- Strong quantitative skills applied to social and environmental data.
- Experience storing and analyzing structured and unstructured data, and developing metadata to known standards (FGDC, Dublin Core).
- Ability to communicate complicated ideas and technical abilities to an inexperienced audience. Demonstrated writing ability through technical and non-technical publications.
- Motivated independent learner.

Highlights:

Machine Learning: classification, regression, clustering.
Statistical Methods: time series, generalized linear models, hypothesis testing and confidence intervals, multilevel models, random forest regression, graph-based methods (social network analysis).
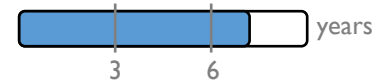
Analytic Experience:

- Postdoctoral Research Scholar; Center for Urban Transportation Research (CUTR), University of South Florida, (USF); Tampa, FL; 2017-Present

  Currently developing multilevel model to understand motorcycle fatalities over time. Developed web-based dashboard using Angular JS, ArcGIS Javascript API, Bootstrap JS, Charts.js, and ArcGIS Online to display Florida motorcycle crash statistics (http://ridesmartflorida.com/wp-content/uploads/2018/05/cutr_mc_stats_mcs.html)

- Doctoral Candidate; School of Geosciences, USF; 2015-2017

  Dissertation research included collecting Twitter social media data and using text analytics and classification methods (Support vector classifier, Random Forest, and Naïve Bayes) to identify messages reporting a influenza like illness. Applied Latent Dirichlet Allocation to discover topics in the message. Developed a new method called space-time hierarchical clustering. Used social network analysis to identify important clusters in the dataset. Tools: sklearn, scipy, n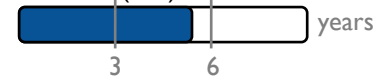umpy, pandas, network, fiona, shapely and MongoDB storage. (http://scholarcommons.usf.edu/etd/6883/, https://github.com/davidlamb)

Skills and Knowledge

Languages

- Python (2.7 and 3.x) /

  years
  3   6

- SQL

  years
  3   6

- SAS / R (3.x)

  years
  3   6

- Javascript

  years
  3   6

- VB.NET; C#.NET

  years
  3   6

Software

- ArcGIS (8.x—10.x)

  years
  3   6

- Excel

  years
  3   6

- Databases

  years
  3   6
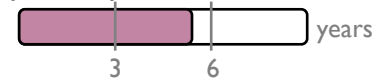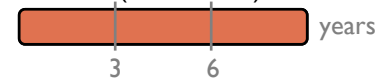
- ArcGIS Online / ArcGIS JSAPI

  years
  3   6

Analytic Experience Cont':

- Research Assistant; Water Institute, USF; 2015-2016.
  Collaborative team project developing an ArcGIS based tool to aid planners in transitioning from grey infrastructure to green infrastructure. Worked independently developing the tool in ArcPy. Communicated remotely with stakeholders across many disciplines (engineering, water resources, and planning). (https://github.com/davidlamb)

- Research Assistant; CUTR, USF; 2012—2014 and 2016—2017
  Produced visualizations and cartographic products for stakeholders in transportation. Analyzed motorcycle crash data using spatial statistics (network k-function and network kernel density). Developed geodatabases storing millions of crash records from 7 years of data for efficient storage and retrieval.

- Research Associate; The Northern Institute, Charles Darwin University; Darwin, Northern Territory, Australia; 2008—2010
  Worked across multiple research groups (education, gambling, and demography). Developed an interrupted time series analysis using ARIMA model to look at impact of government policies towards Indigenous Australians and gambling expenditure ("The Intervention"). Co-managed the distribution and data entry of questionnaires looking into the geography of problem gambling.

Professional Experience:

- Senior GIS Analyst; Anderson Consulting Engineers, Inc.; Fort Collins, CO; 2005—2007 and 2010-2012
  Lead GIS Analyst on FEMA Map Modernization project . Developed ArcObjects VB.Net application for automated processes (marketed as Flo-2D DFIRM Tools). Managed and produced geodatabases for storage of data meeting FGDC metadata standards

- CAD / GIS Specialist; Telesto Solutions, Inc.; Fort Collins, CO; 2002-2005;

Teaching Experience:

- Adjunct Instructor; School of Geosciences, USF, Tampa FL; 2016-2017
  Teaching undergraduate in introductory statistics, cartography, and Graduate Geographic Information Systems;

- Teaching Assistant, School of Geosciences, USF, Tampa, FL; 2012—2016
  Teaching undergraduate in introductory statistics, andcartography. Statistics course covers sampling, questionnaire design, descriptive statistics, visualization methods, probability distributions, t-tests, and regression analysis.

Education:

- Ph.D. In Geography, School of Geosciences, University of South Florida. Dissertation Title: *Identifying nodes of transmission in disease diffusion through social media.* 2017

- Graduate Certificate in GIS. Manchester Metropolitan University (Distance Learning, UNIGIS). 2007.

- B.A. in Geography, Emphasis GIS, History Minor. University of Northern Colorado. 2004.

- Associates Degree in General Studies. Front Range Community College. 1999.

- Certificate IV Training and Assessment, Charles Darwin University. 2009.

Training:

- Advanced GIS, Spatial Analysis, and Python Programming (15 Graduate Level Credits)

- Multivariate Statistics, categorical data analysis, multilevel modeling, and structural equation modeling (18 Graduate Level Credits)

Languages:

- English (native)
- French (reading, speaking) Beginner to Intermediate

Selected Publications (out of 9):

Lamb, D. S. 2017. An automated displaced proportional circle map using Delaunay triangulation and an algorithm for node overlap removal. Cartographica: The International Journal for Geographic Information and Geovisualization,*52*(4), 364-370

Lamb, D. S., J. A. Downs, and C. Lee. 2015. Examining the effects of network structure on the network K-function. Transactions in GIS. DOI: 10.1111/tgis.12157

Lamb, D., and M. Young. 2011. "Pushing buttons": an evaluation of the effect of Aboriginal income management on commercial gambling expenditure. Australian Journal of Social Issues: 119–140.

Downs, J. A., **D. Lamb**, G. Hyzer, R. Loraamm, Z. J. Smith, and B. M. O'Neal. 2014. Quantifying spatio-temporal interactions of animals using probabilistic space–time prisms. Applied Geography 55:1–

Selected Presentations and Reports

Lamb, D. S. 2018, Learning Gate Community School Geodemographic Profile; report presented to the Learning Gate Community School Board

Lamb, D. S. 2018. Random Forest Trees for Spatial Interpolation. Presented at the Meeting of the Association of American Geographers, New Orleans, LA.

Lamb, D. S. 2017. Spatiotemporal Clustering of Motorcycle Crashes on a Network Using Agglomerative Hierarchical Clustering. Meeting of the Association of American Geographers, Boston, MA.

Lamb, D. S. 2014. Examining the effects of network structure on the network K-function. Meeting of the Association of American Geographers, Tampa, FL.

Selected Internal and External Grants

- Martin Young (Principal Investigator), Bruce Doran, David S Lamb, and David Marshall (Co-Investigators). Gambling Harm in Northern Australia. Australian Research Council. Award amount: 150,000 AUD. Effective 2009-2011.
- Martin Young (Principal Investigator), Bruce Doran, and David S Lamb (Co-Investigators). Gambling Harm in Northern Australia. Northern Territory Innovations Fund. Award amount: 22,500 AUD. Effective 2009.
- David Lamb. Dissertation Completion Fellowship. University of South Florida Graduate School. Award amount: 5,000 USD.
- David Lamb. Identifying Nodes of Transmission using Social Media. Tharp Fellowship, School of Geosciences, University of South Florida 2015. Award amount: 2,000 USD.