Rafael Guimarães Ramos

(Last updated in: July 19th 2020)
Researcher at the National Institute of Space Research (INPE). Av. dos Astronautas, 1.758 – Jardim da Granja. São José dos Campos – SP, 12227-010, Brazil.
rafael.ramos@inpe.br

Research Interests

Spatial Analysis, Geography of Crime, Geographical Information Science, Urban Geography, Criminology, Spatial Models for Human Geography, Data Visualization, Visual Computing.

Academic Qualification

● Graduate Student (Sep.2014-Sep.2019) at the Dept. of Geography, University of California Santa Barbara, USA.

● M.A. (Mar.2011-Jun.2013) in Electrical Engineering (emphasis in Computer Engineering), University of Campinas, Brazil.

● B.S. (Mar.2006-Dec.2010) in Computer Engineering, University of Campinas, Brazil.

Professional Experience

● Oct. 2019 (ongoing). Researcher at the National Institute of Space Research (INPE).

● Aug. 2013-Jul. 2014. Researcher at SimWorx Engineering, Research & Development.

● Aug. 2009-Dec. 2010. Research Internship at CTI Renato Archer.

● Aug. 2008-Jul. 2009. Research Internship at University of Campinas, School of Electrical and Computer Engineering.

Publications

● Journal publications:

RAMOS, R. G. 2019. Does income inequality explain the geography of residential burglaries? The case of Belo Horizonte, Brazil. ISPRS Int. J. Geo-Inf. 2019, 8(10), 439.

● Work in Progress:

RAMOS, R. G.; SILVA, B. A. F.; CLARKE, K. 2019. Too fine to be good? Issues of scale, granularity and error in spatial crime analysis.

RAMOS, R. G. 2019. Robust estimation of standardized crime rates using Geographically Weighted Regression.

● Theses and Dissertations:

RAMOS, R. G. 2019. Methodological contributions to the spatial analysis of crime, with an application to residential burglaries in Belo Horizonte, Brazil. Dissertation (PhD) - University of California Santa Barbara, Department of Geography, Santa Barbara, CA.

RAMOS, R. G. 2013. Ambiente virtual de simulação e visualização do comportamento de risers. 81 f. Dissertação (mestrado) - Universidade Estadual de Campinas, Faculdade de Engenharia Elétrica e de Computação, Campinas, SP.

● Conference Papers:

RAMOS, R. G.; MARTINO, J. M.; MOROOKA, C. 2013. Visualization Environment with Real-Time Interaction for Simulation of Vertical Rigid Risers. In: Rio Pipeline, 2013, Rio de Janeiro. Proceedings of the Rio Pipeline 2013 Conference.

LOTUFO, R. A.; MACHADO, R. C.; KORBES, A.; RAMOS, R. G. 2009. AdessoWiki - Online Collaborative Scientific Programming Platform. In: WikiSym 2009, 2009, Orlando. The Proceedings of the 5th International Symposium on Wikis and Open Collaboration (WikiSym '09).

● Other Publications:

RAMOS, R. G.; MARTINO, J. M. 2012 . Ambiente Interativo em Tempo Real para Visualização de Risers Rígidos. (in Portuguese)

RAMOS, R. G.; SILVEIRA, G. ; MORONI, Artemis 2011. Um Sistema de Visão Robótica mais flexível para o Projeto AURAL. (in Portuguese)

Conferences

● Spatial Statistics 2019: Towards Spatial Data Science, Sitges, Spain. Poster presentation titled "Improving crime rate standardization: a geographically weighted regression approach". Authors: Rafael G. Ramos.

● AAG Annual Conference 2019, Washington D.C. Paper presentation titled "Social & Environmental Determinants of Urban Crime: residential burglaries in Belo Horizonte, Brazil". Authors: Rafael G. Ramos.

● AAG Annual Conference 2017, Boston. Paper presentation titled "Is finer better? On the limits of crime data aggregation". Authors: Rafael G. Ramos.

● AAG Annual Conference 2016, San Francisco. Poster presentation titled "Exploring the spatial-temporal relations between burglary and socioeconomic factors using GIS". Authors: Rafael G. Ramos, Keith Clarke, Bráulio F. A. da Silva.

Presentations

● July 12th 2019. Poster presentation at Spatial Statistics 2019: Towards Spatial Data Science Conference. Poster titled "Improving crime rate standardization: a geographically weighted regression approach".

● April 26th 2019. Presentation (12 minute talk) for the Graduate Student Presentation Spring 2019, at Dept. of Geography, UCSB, titled "Social & Environmental Determinants of Urban Crime: residential burglaries in Belo Horizonte, Brazil".

● April 7th 2019. Paper presentation (15 minute talk) at AAG Annual Conference 2019. Paper session titled "Urban Crime Mapping and Analysis Using GIS II", paper presentation titled "Social & Environmental Determinants of Urban Crime: residential burglaries in Belo Horizonte, Brazil".

● April 9th 2017. Paper presentation (15 minute talk) at AAG Annual Conference 2017. Paper session titled "Approaches in Understanding Urban Precarity", paper presentation titled "Is finer better? On the limits of crime data aggregation".

● April 7th 2017. Presentation (15 minute) at Brown University, titled "Is finer better? On the limits of crime data aggregation".

● March 30th 2016. Poster presentation at AAG Annual Conference 2016. Poster titled "Exploring the spatial-temporal relations between burglary and socioeconomic factors using GIS".

● Oct 15th 2015. Geography Colloquium Presentation (15 minute talk) at University of California Santa Barbara, Department of Geography. Presentation titled "Crime and Income Inequality: a spatial simulation model".

Teaching

● April. 2019-Jun. 2019. Teaching Assistant for Geog W12 "Maps and Spatial Reasoning" at the Department of Geography at UCSB.

● Jan. 2019-March. 2019. Teaching Assistant for Geog 191 "Optimization Methods for Geographic Problems" at the Department of Geography at UCSB.

● Sep. 2018-Dec. 2018. Teaching Assistant for Geog 140 "Historical Geography" at the Department of Geography at UCSB.

● April. 2018-Jun. 2018. Teaching Assistant for Geog 5 "People, Place, and Environment" at the Department of Geography at UCSB.

● Jan. 2018-March. 2018. Teaching Assistant for Geog 191L "Laboratory in Optimization Methods for Geographic Problems" at the Department of Geography at UCSB.

● April. 2017-Jun. 2017. Teaching Assistant for Geog W12 "Maps and Spatial Reasoning" at the Department of Geography at UCSB.

● Oct. 2015-Dec. 2015. Teaching Assistant for Geog 176A "Introduction to Geographical Information Systems" at the Department of Geography at UCSB.

Fellowships & Scholarships

● CAPES "Science without Borders Fellowship" for full PhD at University of California Santa Barbara. (Sep.2014-Aug.2018, ongoing).

● CNPq "RHAE, SET-F" Scholarship for Graduate Research at SimWorx Engenharia, Pesquisa & Desenvolvimento, Brazil. (Sep.2013-Jul.2014).

● CNPq Scholarship for MS at University of Campinas, Brazil. (Jun.2011-Jun.2013).

● PIBIC/CNPq Scholarship for Undergraduate Research at CTI Renato Archer, Brazil. (Aug.2009-Dec.2010).

● PIBIC/CNPq Scholarship for Undergraduate Research at University of Campinas, Brazil. (Aug.2008-Jul.2009).

Technical Skills

● Experience with R, Python, C/C++ and Matlab; familiar with Java, Javascript, Ruby, SQL and others.

● Experience with ArcGIS, familiar with QGIS.

● Experience with Spatial Analysis, including spatial statistics and optimization methods.

● Experience with Data Visualization and Visual Computing concepts and tools.

● Experience with fundamentals of Computer Science: Algorithms, Data Structures, Networks.

● Notions of high performance computation, including GPU processing.

Languages

● Portuguese: native speaker.

● English: fluent.

● Japanese: basic, JLPT N5 certificate.

● French: basic.