



Raquel L. COSTA

Bioinformatician | Data scientist

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 scholar.google.com/citations?user=uogTE8IAAAAJ

Nationality : Brazilian

Visa : EU Blue Card Germany

Professional skills

Programming Languages : R/Shiny, Python, and C/C++
Computer Science : Machine learning techniques and Parallel computing
Databases : Relational (PostgreSQL), NoSQL (graph DB, Neo4J)
Maths : Numerical analysis, Linear systems
Bioinformatics : Analysis and integration of 'omics' data (transcriptomics, genomics and epigenomics)
Miscellaneous : \LaTeX typesetting and publishing, front-end development

Education

2010 – 2014 **D.Sc. in Computational Modeling.** National Laboratory for Scientific Computing, LNCC. Petrópolis, RJ – Brazil
2008 – 2010 **M.Sc. in Computational Modeling.** National Laboratory for Scientific Computing, LNCC. Petrópolis, RJ – Brazil
2006 – 2007 **Postgraduate Specialization in Geotechnologies.** Federal Fluminense University, UFF. Niterói, RJ – Brazil
2003 – 2005 **B.Sc. in Biological Sciences.** Federal University of Ouro Preto, UFOP. Ouro Preto, MG – Brazil
1999 – 2003 **B.Sc.Ed. in Biological Sciences.** Federal University of Ouro Preto, UFOP. Ouro Preto, MG – Brazil

Research experience

– January 2022	Bioinformatician (remote) National Institute of Cardiology, INC, Rio de Janeiro, Brazil <ul style="list-style-type: none">Supporting bioinformatics analysesDevelopment of a framework for variant annotation <div>genomics variant annotation container</div>
August 2020 September 2016	Postdoctoral researcher National Institute of Cancer, INCA, Rio de Janeiro, Brazil <ul style="list-style-type: none">Supervisor : Marcelo Alves SoaresPreparing summer coursesSupporting bioinformatics analysesDeveloping analytical pipelines <div>Oncovirus Multi-omics networks Cancer HPV HNSCC HCV HCC Co-expression networks</div>
June 2016 May 2015	Postdoctoral researcher Military Institute of Engineering, IME, Rio de Janeiro, Brazil <ul style="list-style-type: none">Supervisor : Maria Cláudia CavalcantiCo-advisor of the Systems and Computation graduate program (Computer Engineering department)Teaching assistant in the database class <div>Networks Co-occurrence Association rules</div>
September 2015 May 2015	Data scientist researcher National Institute of Traumatology and Orthopedics, INTO, Rio de Janeiro, Brazil <ul style="list-style-type: none">Supporting the orchestration of multiple analytical tasks derived from neurodiagnostics data <div>Scientific workflows</div>
April 2015 November 2014	Postdoctoral researcher National Laboratory for Scientific Computing, LNCC, Petrópolis, Brazil <ul style="list-style-type: none">Supervisor : Fábio PortoProject title : Parallelism strategies on the GeNNetVirus – a framework of modeling and analysis of gene interaction networksTeaching assistant in the database class <div>Scientific workflows GeNNet Graph databases HPC</div>

April 2015
 November 2014

Researcher | Center for Innovation in Cloud Computing, CICN, Petrópolis, Brazil
 > Project : Processing and analysis of big graphs to support resource sharing management

Scientific workflows Graph databases Neo4j

Teaching, supervision, and invited presentations

- 2018 – 2020** Teaching R in High-Performance Computing, HPC (Course), Santos Dumont Supercomputer Summer School. Place : LNCC.
- 2018** Teaching :
 - > In silico experimental analysis of viromes : discovery of new viruses in the assembly of viral genomes (Course). Summer program in INCA.
 - > Introduction to Linux for Life Sciences (Course). Summer program in INCA.
 - > Introduction to R for Life Sciences (Course). Summer program in INCA.
 - > R em HPC (Course). Place : Universidade de Brasília (UnB).
- 2017** Co-expression networks of oncoviruses (Presentation).
- 2015 – 2017** Co-advisor | Systems and Computation at Military Institute of Engineering (IME) Rio de Janeiro, Brazil
 M.Sc. candidate : Felipe A. Oliveira | Title : Mining of multi-relationship association rules in data datasets on the web.

Languages

Portuguese ● ● ● ● ●
 English ● ● ● ● ●
 Spanish ● ● ● ● ○
 German ● ● ○ ○ ○
 French ● ● ○ ○ ○

Reviewer for scientific journals

- > BMC Genomics
- > Cancer Biomarkers
- > Computational Biology and Chemistry
- > DNA and Cell Biology
- > Nucleic Acid and Research (NAR)
- > Oncotarget
- > PlosOne
- > Scientific Reports

Support for international events

- 2018** 44th Very Large Databases (VLDB). Local : Windson Barra Hotel, Rio de Janeiro, Brazil. Date : 27 – 31 August.
Participation : Coordinators of Latin America Volunteer Students. Link : <http://vldb2018.lncc.br/conference-officers.html>

Fellowships, Scholarships and Grants

- 2019** Third best paper award on SBSI (Brazilian Symposium on Information Systems), organized by SBC (Brazilian Computer Society).
- 2019** Among top candidates with high rating in a selection by the IARC Fellowship Selection Committee
- 2017** Grant for participation and presentation of work at the 3rd ICGEB Workshop on Human Papillomavirus and associated malignancies : biology, prevention and therapy. Place : São Paulo. Date : November 2017.
- 2013** Grant for participation and presentation of work at the 11th Computational Methods in Systems Biology (CMSB). Place : Klosterneuburg, Austrian. Date : September 2013.
- 2012 – 2013** Scholarship for the sandwich doctorate program of the Science without Borders Program (CNPq Brazil). Place : University of Manchester, UK.

- 2021**
- > A Survey of e-Biodiversity: Concepts, Practices, and Challenges. Luiz M. R. Gadelha Jr., Pedro C. de Sira-cusa, Eduardo Couto Dalcin, Luís Alexandre Estevão da Silva, Douglas A. Augusto, Eduardo Krempser, Helen Michelle Affe, Raquel Lopes Costa, Maria Luiza Mondelli, Pedro Milet Meirelles, Fabiano Thomp-son, Marcia Chame, Artur Ziviani, Marínez Ferreira de Siqueira. **WIREs : Data Mining and Knowledge Discovery**, 11(1) e1394. DOI : <https://doi.org/10.1002/widm.1394>
- 2020**
- > Mining Multirelation Association Rules on the Web of Data. Oliveira, Felipe; Villote, Guilherme S.; Costa, Raquel L.; Goldschmidt, Ronaldo, R. and Cavalcanti, Maria C. **iSys : Revista Brasileira de Sistemas de Informação** (Brazilian Journal of Information Systems), 13(4), 77-100. 2020. <https://doi.org/10.5753/isys.2020.830>.
- 2018**
- > Distinct co-expression networks using multi-omic data reveal novel interventional targets in HPV-positive and negative head-and-neck squamous cell cancer. Costa, Raquel L.; Boroni, Ma-riana and Soares, Marcelo A. **Scientific Reports 8 : 15254**. DOI : [dx.doi.org/10.1038/s41598-018-33498-5](https://doi.org/10.1038/s41598-018-33498-5).
- 2017**
- > Analysis of the cervical microbiome and potential biomarkers from postpartum HIV-positive women displaying cervical intraepithelial lesions. **Scientific Reports 7 :17364**. Curty, Gislaine; Costa, Raquel L.; Siqueira, Juliana D., Meyrelles; Angela I., Machado; Elizabeth S., Soares; Esmeralda A., and Soares; Marcelo A. DOI : [dx.doi.org/10.1038/s41598-017-17351-9](https://doi.org/10.1038/s41598-017-17351-9)
 - > GeNNet : an integrated platform for unifying scientific workflows and graph databases for transcrip-tome data analysis. **PeerJ 5 :e3509**. Costa, Raquel L.; Gadelha, Luiz M.; Ribeiro-Alves, Marcelo, and Porto, Fábio. DOI : [dx.doi.org/10.7717/peerj.3509](https://doi.org/10.7717/peerj.3509)
 - > Forest transitions in tropical landscapes : A test in the Atlantic Forest biodiversity hotspot. **Applied Geography Vol.82 :93–100**. Costa, Raquel L.; Prevedello, Jaime A.; Souza, Bruno G.; and Cabral, Diogo C. DOI : [dx.doi.org/10.1016/j.apgeog.2017.03.006](https://doi.org/10.1016/j.apgeog.2017.03.006)
- 2016**
- > A ‘lógica’ por trás da seleção natural : teoria dos jogos e as Estratégias Evolutivamente Estáveis. **Bio-matemática, 26**. Almeida, Paulo José A. L. de; Costa, Raquel Lopes; Kajin, Maja, Palmeira; Carlos F., and Vieira, Marcus Vinícius.
- 2012**
- > Comparative evolutionary epidemiology of dengue virus serotypes. **Infection, Genetics and Evolu-tion 12(2) :309–14**. Costa, Raquel L.; Voloch, Carolina M., and Schrago, Carlos G. DOI : [dx.doi.org/10.1016/j.meegid.2011.12.011](https://doi.org/10.1016/j.meegid.2011.12.011)

- 2019**
- > Multirelation Association Rule Mining on Datasets of the Web of Data. Oliveira, Felipe. A.; Costa, Raquel L.; Goldschmidt, Ronaldo, R. and Cavalcanti, Maria C. Submitted to event : **SBSI 2019**, Simpósio Brasileiro de Sistemas de Informação. Maio 2019. Aracaju, SE Brazil. Complete article. date : November, 11th 2018. DOI : 10.1145/3330204.3330271 ISBN : 978-1-4503-7237-4