Paulo E. P. Burke

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27 years old

EDUCATION

Ph.D. Student, Computational Biology, University of São Paulo (Current)
Advisor: Luciano da F. Costa, Ph.D.

M.S., Computer Science, Federal University of São Paulo, 2016
Concentrations: Complex Networks
Dissertation: *Whole-Cell Representation Using Complex Networks*
Advisors: Marcos G. Quiles, Ph.D., Claudia B. L. Campos, Ph.D.

B.A, Science and Technology, Federal University of São Paulo, 2014

1 year of Computer Engineering, ETEP (Technical School Professor Everardo Passos), 2011

Technical in Web Design, ETEP (Technical School Professor Everardo Passos), 2011

TEACHING EXPERIENCE

Monitor, Federal University of São Paulo, 2016
Federal University of São Paulo
Courses: Programming Logic, Computational Modeling

Invited Speaker, University of São Paulo, 2018
Summer School on Bioinformatics
Courses: Introduction to Linux, Complex Networks in Biological Systems

Invited Speaker, University of São Paulo, 2019
Summer School on Bioinformatics
Courses: Introduction to Molecular Biology

RESEARCH EXPERIENCE

Scientific Internship on Complex Networks 2013-2014
Worked on the development of a Network Visualization Tool under the supervision of Professor Marcos G. Quiles at the Federal University of São Paulo.

Scientific Internship on Molecular Dynamics 2012-2013
Computational screening of inhibitors for CRISPR using Molecular Dynamics under the supervision of Professor Martin Wurtelle at the Federal University of São Paulo.

Scientific Internship on Molecular Biology 2012-2013
Heterogeneous protein expression and structural characterization of the CRISPR system from thermophilic organisms under the supervision of Professor Martin Wurtelle at the Federal University of São Paulo.

Scientific Internship on Orbital Dynamics 2011-2012
Simulation of atmospheric re-entrance of debris under the supervision of Marcelo Lopes at the National Institute of Space Research.

PUBLICATIONS

Burke, Paulo E. P.; Costa, Luciano da F. ; Interdisciplinary Relationships Between Biological and Physical Sciences. , arXiv:1905.03298, 2019. link

Burke, Paulo E. P.; Comin, Cesar Henrique ; Nascimento, Filipi ; Costa, Luciano da F. . Biological Networks Border Detection. Integrative Biology, v. 9, p. 947-955, 2017. link

Burke, Paulo E. P.; Campos, Claudia B. de L.; Quiles, Marcos G. . Whole-Cell Representation Using Complex Networks. Master's Dissertation, Federal University of São Paulo, 2016. link

Waltemath, Dagmar; Karr, Jonathan; Bergmann, Frank; Chelliah, Vijayalakshmi; Hucka, Michael; Krantz, Marcus; Liebermeister, Wolfram; Mendes, Pedro; Myers, Chris; Pir, Pinar; Alaybeyoglu, Begum; Aranganathan, Naveen; Baghalian, Kambiz; Bittig, Arne; Burke, Paulo; Cantarelli, Matteo; et al. ; Toward community standards and software for whole-cell modeling. IEEE Transactions on Biomedical Engineering (Print), v. PP, p. 1-1, 2016. link

Carvalho, Luiz M. F. ; Santos, Leonardo B. L. ; Burke, Paulo E. P. ; Quiles, Marcos ; Silveira, Waldemir de C. . A geographically-aware complex network approach for foot-and-mouth disease phylodynamics. 6th International Conference on Nonlinear Science and Complexity, 2016. link

Burke, Paulo E. P.; Pereira, Alisson R. ; Santos, Denilson P. S. dos . Modularity and Computational Performance of Genetic Algorithms. Brazilian Conference on Dynamics, Control and Applications, p. 266, 2011.

PRESENTATIONS

Intelligent Systems for Molecular Biology, Systems Modeling COSI. “Towards Homogeneous Modeling and Simulation of Whole-Cells”. 2019.

Conference on Complex Systems. “Simulation of Biochemical Systems Using Constraint-Based Methods and Complex Networks”. 2018.

X-meeting 2017. “Group-Directed Biasing Effects on Topological Properties of PPI Networks”. 2017.

COMBINE 2015. “The Whole-Cell Network of *Mycoplasma genitalium*”. 2015.

Science and Technology Week. “Representation and Simulation of Cells”. 2015.
Workshop on Biotechnology – Unifesp. “Whole-Cell Representation and Analysis of Mycoplasma genitalium Organism Using Complex Networks”. 2014.

III Workshop and School on Dynamics, Transport and Control in Complex Networks – ComplexNet. “Whole-Cell Representation and Analysis of *Mycoplasma genitalium* Organism Using Complex Networks”. 2014.

SICINPE. “Analysis and Simulation of Atmospheric Re-entrance”. 2012.

DINCON. Modularity and Computational Performance of Genetic Algorithms. 2011. .

ADDITIONAL COURSES

Statistical Physics, Institute of Theoretical Physics, UNESP, Brazil. 2019.

Nonlinear Time Series Analysis and Complex Networks in the Big Data Era, Institute of Theoretical Physics, UNESP, Brazil. 2018

Cicardian Ritimicity, University of São Paulo, Brazil. 2013.

Algorithms and Techniques for Genome Assembly, State University of Campinas, Brazil. 2013.

Biomolecular Modeling Across Spatial and Temporal Scales, Federal University of ABC, Brazil. 2013.

Modelling eletronic energy transfer, Federal University of ABC, Brazil. 2013.

Introduction to Artificial Intelligence, Stanford University, USA. (on-line) 2012.

Evolutionary Computation, National Institute of Space Research, Brazil. 2011.

GRANTS AND AWARDS

ISCB Travel Fellowship, Switzerland, 2019.

Whole-Cell Summer School Grant, USA, 2015.

Whole-Cell Summer School Grant, Germany, 2015.

Regional Programming Marathon, 2014.

MEMBERSHIPS

International Society of Computational Biology – Regional Student Group

Student Representative at the Graduate Program in Bioinformatics, University of São Paulo

Coordinator at Summer School on Bioinformatics 2019, University of São Paulo

RELEVANT SKILLS

Programming ability in C++, Python

Wet lab experience on heterogeneous protein expression

Design and Web Design ability

Speaks Portuguese, English and Spanish