

# Henrique Ferraz de Arruda (Curriculum vitae)

email: [h.f.arruda@gmail.com](mailto:h.f.arruda@gmail.com)

URL: <http://hfarruda.gitlab.io>

Born: June 22, 1989—São Carlos, São Paulo, Brazil

Nationality: Brazilian

## Areas of specialization

Network Science

Network Structure

Text-based Networks

Machine Learning

Science of Science

## Appointments held

- 2015-2019 PhD fellow, ICMC - University of São Paulo, supported by CAPES
- 2013-2015 MSc fellow, ICMC - University of São Paulo, supported by CNPq and CAPES
- 2011-2012 Undergraduate research fellow, São Paulo State University

## Education

- 2019-2020 POST-DOCTORAL in Computational Physics, Institute for Biocomputation and Physics of Complex Systems (BIFI), University of Zaragoza
- 2019- POST-DOCTORAL in Computational Physics, IFSC - University of São Paulo
- 2015-2019 PHD in Computer Science and Computational Mathematics, ICMC - University of São Paulo
- 2013-2015 MSc in Computer Science and Computational Mathematics, ICMC - University of São Paulo
- 2009-2012 BSc in Computer Science, São Paulo State University

## Grants, honors & awards

- 2020 AWARD: Best Ph.D. Thesis, CAPES Thesis Award Edition - 2020, in the category of computer science<sup>1</sup>
- 2019-2020 POST-DOCTORAL supported by FAPESP (BEPE), University of Zaragoza
- 2019- POST-DOCTORAL supported by FAPESP, University of São Paulo - USP
- 2017 PHD (period abroad - Santander scholarship) Short-term Visiting Scholar, Indiana University, Bloomington, Indiana, USA
- 2017 The paper On the “Calligraphy” of Books was considered one of the Best of the Physics arXiv (week ending June 10, 2017) by MIT Technology Review
- 2015-2019 PHD supported by CAPES, University of São Paulo - USP
- 2014-2015 MSc supported by CAPES, University of São Paulo - USP
- 2013-2014 MSc supported by CNPq, University of São Paulo - USP
- 2012 AWARD: Best Undergraduate Thesis, São Paulo State University

## Publications & talks

### JOURNAL ARTICLES

- 2020 Alexandre Benatti, Henrique Ferraz de Arruda, Filipi Nascimento Silva, Cesar Henrique Comin, Luciano da Fontoura Costa. Opinion diversity and social bubbles in adaptive Sznajd networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2020. DOI:10.1088/1742-5468/ab6de3
- 2019 Henrique Ferraz de Arruda, Cesar Henrique Comin, Luciano da Fontoura Costa. Problem-solving using complex networks. *The European Physical Journal B (EPJ B)*, DOI:10.1140/epjb/e2019-100100-8

---

<sup>1</sup>CAPES Thesis Award is a national honor.

- 2019 Henrique Ferraz de Arruda, Vanessa Queiroz Marinho, Diego Raphael Amancio, Luciano da Fontoura Costa. Paragraph-based representation of texts: A complex networks approach. *Information Processing & Management*, DOI:10.1016/j.ipm.2018.12.008
- 2019 Henrique Ferraz de Arruda, Filipi Nascimento Silva, Cesar Henrique Comin, Diego Raphael Amancio, Luciano da Fontoura Costa. Connecting Network Science and Information Theory. *Physica A: Statistical Mechanics and its Applications*, DOI:10.1016/j.physa.2018.10.005
- 2018 Henrique Ferraz de Arruda, Vanessa Queiroz Marinho, Diego Raphael Amancio, Luciano da Fontoura Costa. An image analysis approach to text analytics based on complex networks. *Physica A: Statistical Mechanics and its Applications*, DOI:10.1016/j.physa.2018.06.110
- 2018 Henrique Ferraz de Arruda, Cesar Henrique Comin, Luciano da Fontoura Costa. How Integrated are Theoretical and Applied Physics?. *Scientometrics*, DOI:10.1007/s11192-018-2777-8
- 2018 Thales Sinelli Lima, Henrique Ferraz de Arruda, Filipi Nascimento Silva, Cesar Henrique Comin, Diego Raphael Amancio, Luciano da Fontoura Costa. The Dynamics of Knowledge Acquisition via Self-Learning in Complex Networks. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, DOI:10.1063/1.5027007
- 2018 Henrique Ferraz de Arruda, Filipi Nascimento Silva, Vanessa Queiroz Marinho, Diego Raphael Amancio, Luciano da Fontoura Costa. Representation of texts as complex networks: a mesoscopic approach. *Journal of Complex Networks*, DOI:10.1093/comnet/cnx023
- 2017 Henrique Ferraz de Arruda, Filipi Nascimento Silva, Luciano da Fontoura Costa, Diego Raphael Amancio. Knowledge Acquisition: A Complex Networks Approach. *Information Sciences*, DOI:10.1016/j.ins.2017.08.091
- 2016 Henrique Ferraz de Arruda, Luciano da Fontoura Costa, Diego Raphael Amancio. Topic segmentation via community detection in complex networks. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, DOI:10.1063/1.4954215
- 2016 Carlos A. S. J. Gulo, Henrique Ferraz de Arruda, Alex F. de Araujo, Antonio Carlos Sementille, João Manuel R. S. Tavares. Efficient parallelization on GPU of an image smoothing method based on a variational model. *Journal of Real-Time Image Processing*, DOI:10.1007/s11554-016-0623-x
- 2016 Henrique Ferraz de Arruda, Luciano da Fontoura Costa, Diego Raphael Amancio. Using complex networks for text classification: Discriminating informative and imaginative documents. *EPL (Europhysics Letters)*, DOI:10.1209/0295-5075/113/28007
- 2016 Henrique Ferraz de Arruda, Cesar Henrique Comin, Luciano da Fontoura Costa. Minimal paths between communities induced by geographical networks. *Journal of Statistical Mechanics: Theory and Experiment*, DOI:10.1088/1742-5468/2016/02/023403
- 2015 Henrique Ferraz de Arruda, Cesar Henrique Comin, Mauro Miazaki, Matheus Palhares Viana, Luciano da Fontoura Costa. A framework for analyzing the relationship between gene expression and morphological, topological, and dynamical patterns in neuronal networks. *Journal of neuroscience methods*, DOI:10.1016/j.jneumeth.2015.02.019
- CONFERENCE ARTICLES
- 2017 Vanessa Queiroz Marinho, Henrique Ferraz de Arruda, Thales Sinelli Lima, Diego Raphael Amancio, Luciano da Fontoura Costa. On the “Calligraphy” of Books. *Proceedings of TextGraphs-11: the Workshop on Graph-based Methods for Natural Language Processing, ACL 2017*, DOI:10.18653/v1/w17-2401
- OTHER PUBLICATIONS
- 2019 Henrique Ferraz de Arruda. Multi-scale analysis of languages and knowledge through complex networks. Ph.d. Thesis.  
[USP repository](#)
- 2015 Henrique Ferraz de Arruda. Structural and dynamical analysis of biological networks. Master Thesis (in Portuguese).  
[USP repository](#)

## Languages

- Portuguese
- English
- Spanish (speaking and reading)
- French (beginner)

## Additional Links

- Research ID: <http://www.researcherid.com/rid/J-4948-2017>
- Google Scholar: <https://scholar.google.co.uk/citations?user=Z5S1qBYAAAAJ>
- ResearchGate: [https://www.researchgate.net/profile/Henrique\\_Arrudaz](https://www.researchgate.net/profile/Henrique_Arrudaz)
- ORCID: <https://orcid.org/0000-0002-4325-6888>

## Additional Information

- In 2019 I was invited to be a reviewer of a project in the French National Research Agency (ANR) 2020. However, the authors did not submit the proposal;
- I have been reviewing papers of international journals, as follows: Complexity, PeerJ Computer Science, PLoS One, Future Internet, Journal of Information and Data Management - JIDM, Scientometrics, and Chaos Solitons & Fractals.