FABRICIO MURAI

Curriculum Vitae, September 1, 2021

Associate Professor
Universidade Federal de Minas Gerais
Department of Computer Science
Av. Pres. Antonio Carlos, 6627
ICEx Building – Annex U – Office 4329
Belo Horizonte, MG, Brazil 31270-901

Office: +55 (31) 3409-1488
Mobile: +55 (31) 99283-6469
Email: murai@dcc.ufmg.br
Homepage: http://murai.dcc.ufmg.br

ACADEMIC EXPERIENCE

2020 – present	Associate Professor of Computer Science Universidade Federal de Minas Gerais Program ranked #1 in the country
2017 – 2020	Assistant Professor of Computer Science Universidade Federal de Minas Gerais

EDUCATION

2016 Ph.D. Computer Science, University of Massachusetts Amherst. Adviser: Don Towsley

2014 M.S. Computer Science, University of Massachusetts Amherst. Adviser: Don Towsley

2011 M.S. Systems and Computer Engineering, Universidade Federal do Rio de Janeiro

2007 B.S. Computer Science, Universidade Federal do Rio de Janeiro

AWARDS AND HONORS

2021 RecSys Inclusion Grant: for virtual participation in RecSys
2021 Distinguished TPC member: IEEE INFOCOM (100/488)
2020 Distinguished TPC member: IEEE INFOCOM (100/481)
2020 Best Paper Award Brazilian Workshop on Social Network Analysis and Mining (1/15/49)
2019 Honorable Mention Brazilian Workshop on Social Network Analysis and Mining (5/14/51)
2018 3rd Best Paper Award Brazilian Workshop on Social Network Analysis and Mining (3/17/61)
2014 Distinguished Ph.D. Candidate CICS UMass Amherst (2 awarded/year)
2014 Outstanding Synthesis Award CICS UMass Amherst (2 awarded/year)
2010 IFIP WG 7.3 Student Travel Grant: for participation in IFIP Performance
2007 Graduated with honors (*magna cum laude*).

FELLOWSHIPS

2011–2015	Brazilian National Science Foundation (CNPq) Full Ph.D. Fellowship (single one awarded to CS in 2011)
2011–2015	Brazilian Graduate Council of the Ministry of Education (CAPES) Full Ph.D. Fellowship (applicant ranked 1st in STEM in 2011; withdrawn)
2009–2010	Rio de Janeiro State Research Support Funding Agency, Brazil M.S. Scholarship "Grade A Student" (2 awarded/year in the graduate program)
2008–2009	Brazilian National Science Foundation (CNPq) M.S. Scholarship

RESEARCH EXPERIENCE

12/2018 – 02/2019	Politecnico di Torino, Italy. Visiting Scholar (SmartData Research Group) Host: Marco Mellia
08/2015 – 09/2016	University of Massachusetts Research Assistant Research topic: Multivariate Heavy Tail Phenomena Supervisor: Don Towsley
05/2015 – 08/2015	LinkedIn, Sunnyvale CA. Social Network Analysis Intern (Experimentation Team) Research topic: Network A/B testing Manager: Ya Xu
07/2011 – 05/2015	University of Massachusetts Research Assistant Research topic: Modeling and Analysis of Network Dynamics Supervisor: Don Towsley

PUBLICATIONS

Journal Papers

Carlos H. G. Ferreira^{G}, **Fabricio Murai**, Ana P. C. Silva, Martino Trevisan, Luca Vassio, Idilio Drago, Marco Mellia, and Jussara M. Almeida. On the use of network backbone extraction for online collective behavior modeling: A comprehensive comparative study. *IPM (*in preparation*).*

Eduarda T. C. Chagas^{G}, Pedro H. Barros^{G}, Isadora Cardoso-Pereira^{G}, Igor V. Ponte, Pablo Ximenes, Flávio Figueiredo, **Fabricio Murai**, Ana Paula Couto da Silva, Jussara M. Almeida, Antonio A. F. Loureiro, and Heitor S. Ramos. Effects of Population Mobility on the COVID-19 Spread in Brazil. *PLOS ONE* (*2nd round of reviews*).

2021

41. Bárbara Silveira[G], Henrique S Silva[U], **Fabricio Murai**, and Ana Paula C da Silva. Predicting user emotional tone in mental disorder online communities. *Future Generation Computer Systems*, 2021.

40. Carlos H G Ferreira[G], **Fabricio Murai**, Ana P C Silva, Jussara M Almeida, Martino Trevisan, Luca Vassio, Marco Mellia, and Idilio Drago. On the dynamics of political discussions on Instagram: A network perspective. *Online Social Networks and Media*, 2021.

39. Francisco Galuppo Azevedo[U] and **Fabricio Murai**. Evaluating the state-of-the-art in mapping research spaces: A Brazilian case study. *PLOS ONE*, 2021.

38. Bárbara Silveira[G], **Fabricio Murai**, and Ana Paula C da Silva. Analysis and Prediction of Users' Emotional Tone in Reddit Mental Health Communities. *iSys - Brazilian Journal of Information Systems*, 2021 (in Portuguese).

2019

37. Carlos Henrique Gomes Ferreira[G], **Fabricio Murai**, Breno de Sousa Matos[U], and Jussara M Almeida. Modeling Dynamic Ideological Behavior in Political Networks. *The Journal of Web Science*, 2019.

36. **Fabricio Murai**, Bruno Ribeiro, Don Towlsey, and Pinghui Wang. Characterizing Directed and Undirected Networks via Multidimensional Walks with Jumps. *ACM Trans. Knowl. Discov. Data*, 2019.

35. Julio C S Reis[G], André Correia[U], **Fabricio Murai**, Adriano Veloso, and Fabrício Benevenuto. Supervised Learning for Fake News Detection. *IEEE Intelligent Systems*, 2019.

2018

34. **Fabricio Murai**, Diogo Rennó[G], Bruno Ribeiro, Gisele L Pappa, Don Towsley, and Krista Gile. Selective harvesting over networks. *Data Mining and Knowledge Discovery*, 2018.

Earlier work

33. **Fabricio Murai**, Bruno Ribeiro, Don Towsley, and Pinghui Wang. On Set Size Distribution Estimation and the Characterization of Large Networks via Sampling. *IEEE Journal on Selected Areas in Communications*, 2013.

32. **Fabricio Murai**, Antonio A de A. Rocha, Daniel R Figueiredo, and Edmundo A de Souza e Silva. Heterogeneous download times in a homogeneous BitTorrent swarm. *Computer Networks*, 2012.

Conference and Refereed Workshop Papers

Fabricio Murai, Bruno Ribeiro and Sanjay Rao. Inductive Counterfactual Encoders with an Application to Computer Networking (*in preparation*).

Daniel Mello[G], **Fabricio Murai**, and Renato Assunção. Top-Down Deep Clustering with Multi-generator GANs (*under review*).

2021

31. Shiri Dori-Hacohen, Roberto Montenegro, **Fabricio Murai**, Scott Hale, Keen Sung, Michela Blaine and Jennifer Edwards-Johnson. Fairness via AI: Bias Reduction in Medical Information. In *FaccTRec@RecSys*, 2021 (4 pages).

30. Bruno Guilherme Gomes^{G}, **Fabricio Murai**, Olga Goussevskaia, and Ana Paula da Silva. Mixture Variational Autoencoder of Boltzmann Machines for Text Processing. In *NLDB*, 2021 (11 pages, acceptance rate: 23%).

29. Bruno Guilherme Gomes^{G}, **Fabricio Murai**, Olga Goussevskaia, and Ana Paula da Silva. Sequence-Based Word Embeddings for Effective Text Classification. In *NLDB*, 2021 (11 pages, acceptance rate: 23%).

28. Davi Pedrosa de Aguiar^{G} and **Fabricio Murai**. Encoding Physical Conditioning from Inertial Sensors for Multi-step Heart Rate Estimation. In *Brazilian Conference on Intelligent Systems (BRACIS)*, 2021 (15 pages).

27. Davi Pedrosa de Aguiar^{G} and **Fabricio Murai**. Encoding physical conditioning from inertial sensors for multi-step heart rate regression. In *ACM-CHIL Workshop*, 2021 (poster).

2020

26. Carlos Henrique Gomes Ferreira^{G}, **Fabricio Murai**, Ana Paula da Silva, Jussara Marques de Almeida, Martino Trevisan, Luca Vassio, Idilio Drago, and Marco Mellia. Unveiling Community Dynamics on Instagram Political Network. In *WebSci*, 2020 (10 pages, acceptance rate: 26%).

25. Lucas Lima^{G}, Julio C S Reis^{G}, Philipe Melo^{G}, **Fabricio Murai**, and Fabrício Benevenuto. Characterizing (Un)moderated Textual Data in Social Systems. In *ASONAM*, 2020 (5 pages, full+short acceptance rate: 37%).

2019

24. Julio C S Reis^{G}, André Correia^{G}, **Fabricio Murai**, Adriano Veloso, and Fabrício Benevenuto. In *WebSci* (10 pages, acceptance rate: 32%).

23. Martino Trevisan, Luca Vassio, Idilio Drago, Marco Mellia, **Fabricio Murai**, Flavio Figueiredo, Ana Paula da Silva, and Jussara M Almeida. Towards Understanding Political Interactions on Instagram. In *HT*, 2019 (5 pages, acceptance rate: 29%).

22. Marco Lattuada, Eugenio Gianniti^{G}, Marjan Hosseini^{G}, Danilo Ardagna, Alexandre Maros^{G}, **Fabricio Murai**, Ana Couto da Silva, and Jussara Almeida. Gray-Box Models for Performance Assessment of Spark Applications. In *CLOSER*, 2019 (10 pages).

21. Alexandre Maros^{G}, **Fabricio Murai**, Ana Paula da Silva, Jussara M. Almeida, Marco Lattuada, Eugenio Gianniti^{G}, Marjan Hosseini^{G}, and Danilo Ardagna. Machine Learning for Performance Prediction of Spark Cloud Applications. In *CLOUD*, 2019 (8 pages, acceptance rate: 20.8%).

2018

20. Bárbara Silveira Fraga[G], Ana Paula da Silva, and **Fabricio Murai**. Online Social Networks in Health Care: A Study of Mental Disorders on Reddit. In *WI-IAT*, 2018 (6 pages).

19. Francisco Galuppo Azevedo[U], Bruno Demattos Nogueira[U], **Fabricio Murai**, and Ana Paula C. Silva. Estimation Errors in Network A/B Testing Due to Sample Variance and Model Misspecification. In *WI-IAT*, 2018 (6 pages).

18. Karen Braga Enes[G], Pedro Paulo Valadares Brum[G], Tiago Oliveira Cunha, **Fabricio Murai**, Ana Paula da Silva, and Gisele Lobo Pappa. Reddit Weight Loss Communities: Do They Have What It Takes for Effective Health Interventions? In *WI-IAT*, 2018 (6 pages).

17. Lucas Lima[G], Julio C S Reis[G], Philipe Melo, **Fabricio Murai**, Leandro Araujo, Pantelis Vikatos[G], and Fabricio Benevenuto. Inside the Right-Leaning Echo Chambers: Characterizing Gab, an Unmoderated Social System. In *ASONAM*, 2018 (8 pages, acceptance rate: 15%).

16. Levy de Souza Silva[G], **Fabricio Murai**, Ana Paula Couto da Silva, and Mirella M Moro. Automatic Identification of Best Attributes for Indexing in Data Deduplication. In *AMW*, 2018 (10 pages).

Earlier work

15. **Fabricio Murai**, Bruno Ribeiro, Donald Towsley, and Krista Gile. Targeted Network Recruitment on a Budget. In *NetSci*, 2014 (poster).

14. **Fabricio Murai**, Bruno Ribeiro, Donald Towsley, and Krista Gile. Characterizing Branching Processes from Sampled Data. In *SIMPLEX@WWW*, 2013 (7 pages).

13. Bruno Ribeiro, Pinghui Wang, **Fabricio Murai**, and Don Towsley. Sampling directed graphs with random walks. In *INFOCOM*, 2012 (9 pages, acceptance rate: 18%).

12. **Fabricio Murai**, and Daniel Ratton Figueiredo. Assortative Mixing in BitTorrent-Like Networks. In *INFOCOM Workshops*, 2009 (2 pages).

Conference and Refereed Workshop Papers in Portuguese

2021

11. Ronald Pereira[G] and **Fabricio Murai**. Quão efetivas são Redes Neurais baseadas em Grafos na Detecção de Fraude para Dados em Rede? In *Brazilian Workshop on Social Network Analysis and Mining*, 2021 (6 pages, full+short acceptance rate: 36.5%).

2020	10. Bárbara Silveira^{G}, Ana Paula da Silva, and **Fabricio Murai**. Modelos de Previsão do Tom Emocional de Usuários em Comunidades de Saúde Mental no Reddit. In *Brazilian Workshop on Social Network Analysis and Mining*, 2020 (12 pages, Best Paper Award, 1/15/49).
2019	9. Rafael Medina^{G}, Ana da Silva, and **Fabricio Murai**. SEMPLICe: Um Modelo Sequencial de Proficiência em Comunidades Online para Aprendizado de Idioma. In *Brazilian Workshop on Social Network Analysis and Mining*, 2019 (12 pages, Honorable Mention, 5/14/51).
	8. Alexandre Maros^{G}, Jussara Almeida, **Fabricio Murai**, and Ana Paula Couto da Silva. Aprendizado de Máquina para Previsão do Tempo de Execução de Aplicações Spark. In *Brazilian Symposium on Computer Networks and Distributed Systems*, 2019 (14 pages, acceptance rate: 35.1%).
2018	7. Rafael Sales Medina^{G}, Ana Paula Couto da Silva, and **Fabricio Murai**. Análise das Interações Sociais em Comunidades Online de Aprendizado de Idiomas: um estudo de caso no Reddit. In *Brazilian Workshop on Social Network Analysis and Mining*, 2018 (3rd Best Paper Award, 3/17/61).
	6. Bárbara Silveira^{G}, Ana Paula Couto da Silva, and **Fabricio Murai**. Análise de Comunidades de Suporte a Transtornos de Saúde Mental do Reddit. In *Brazilian Workshop on Social Network Analysis and Mining*, 2018 (12 pages, acceptance rate: 27.9%).
	5. Bruno Demattos Nogueira^{U}, Francisco Galuppo Azevedo^{U}, **Fabricio Murai**, and Ana Paula Couto Da Silva. Análise de Algoritmos de Clusterização para Experimentos Randomizados em Redes Sociais de Larga Escala. In *Workshop on Computer and Communication Systems Performance*, 2018 (14 pages, acceptance rate: 30.6%).
	4. Francisco Galuppo Azevedo^{U}, Bruno Demattos Nogueira^{U}, **Fabricio Murai**, and Ana Paula Couto da Silva. Modelos de Resposta para Experimentos Randomizados em Redes Sociais de Larga Escala. In *Workshop on Computer and Communication Systems Performance*, 2018 (6 pages, full+short acceptance rate: 38.9%).
Earlier work	3. **Fabricio Murai**, and Daniel Figueiredo. Formação de clusters em redes P2P por similaridade entre os nós. In *Brazilian Symposium on Computer Networks and Distributed Systems*, 2009 (12 pages, acceptance rate: 28.6%).
	2. Antonio Rocha, Guilherme Jaime, **Fabricio Murai**, Bruno Alves, Daniel Figueiredo, Rosa Leão, and Edmundo de Souza e Silva. Novas evoluções integradas à ferramenta Tangram-II v3.1. In *Brazilian Symposium on Computer Networks and Distributed Systems (Tool Session)*, 2009 (8 pages).

1. **Fabricio Murai**, Hugo Sato, Edmundo de Souza e Silva, and Daniel Figueiredo. Avaliação de um mecanismo de previsão adaptativa de perdas de pacotes com aplicação à transmissão de Voz sobre IP. In *Workshop on Computer and Communication Systems Performance*, 2008 (20 pages, acceptance rate: 33.3%).

STUDENTS

GRADUATED M.S. STUDENTS

Daniel Mello (Murai was Co-advisor with Assunção, UFMG, Aug 2018 – May 2021). Applying to PhDs. Dissertation topic: *Generative Adversarial Networks for Hierarchical Clustering.*

Davi Pedrosa de Aguiar **[27, 28]** (UFMG, Mar 2019 – Apr 2021). Software Engineer at Treinus. Dissertation topic: *Predicting Heart Rate During Physical Activities Using Artificial Neural Networks.*

Bárbara Silveira **[6, 10, 20, 38, 41]** (Murai was Co-advisor with da Silva, UFMG, Mar 2017 – Nov 2019). Tech Lead at A3Data, Lecturer for MBA courses at PUC-Minas. Dissertation topic: *Characterizing and Predicting User Emotional Tone in Mental Health Disorder Online Communities.*

Rafael Sales Medina Ferreira **[7, 9]** (Co-advisor da Silva, UFMG, Mar 2017 – May 2019). Data Science Engineer at Cadence Design Systems. Dissertation topic: *Impact of Online Social Communities in Language Learning.*

CURRENT M.S. STUDENTS

Bruno Gomes **[29, 30]** (Co-advisor with da Silva and Goussevskaia, UFMG, Mar 2018 –). Research topic: *NLP without DL: Two Lightweight Frameworks for Text Classification and Analysis.* (Expected graduation Nov 2021)

Ronald Pereira **[11]** (UFMG, Aug 2019 –). Research topic: *Automatic Detection of Frauds in Financial Transactions Networks using Graph Learning.* (Expected graduation Nov 2021)

Leandro Campos (Co-advisor Valle, UFMG, Mar 2019 –). Research topic: *A Deep Generative Approach for Financial Time Series.* Expected graduation Nov 2021)

Jackson de Faria Jr. (Co-advisor with Assunção, UFMG, Aug 2019 –). Research topic: *Fisher Information-based Adaptive DropConnect for Regularizing Neural Networks.*

Vinicius Oliveira (Co-advisor with Assunção, UFMG, Aug 2020 –). Research topic: *Recommending E-Commerce Goods by (Deep) Learning their Relations in a Complex Networks Setting.*

Gustavo Germano (UFMG, Mar 2020 –).

UNDERGRADUATE RESEARCH ASSISTANTS:

Francisco Galuppo Azevedo **[3, 6, 18, 38]** (UFMG CS Undergraduate, Mar 2017 – Mar 2021). **Now a M.S. student at UFMG**.

Bruno Demattos Nogueira **[3, 6]** (UFMG CS Undergraduate, Mar 2017 – Aug 2021). **Now a M.S. student at UFMG**.

Henrique Soares Assumpção e Silva **[40]** (UFMG CS Undergraduate, Mar 2020 – Dec 2024). Supported by research grant with Inter Bank. Undergraduate research (with weekly meetings): GNNs for Automatic Detection of Money Laundering.

Diogo Oliveira Neiss (UFMG CS Undergraduate, May 2021 [transferred] – Dec 2024). Undergraduate research (with weekly meetings): Learning research maps from scientists' publication trajectories.

TEACHING EXPERIENCE

2021/2

Graduate level *Seminar on Disinformation and Hate Speech in Digital Platforms* (XX students, co-instructed: 50%)
Digital platforms, such as online social networks and applications for exchanging messages such as WhatsApp, are widely popular and essential media spaces for communication in the contemporary world. Different digital platforms have been conducive environments for spreading disinformation, creating polarization and acting out hateful behaviors. Many disinformation campaigns exploit technological flaws associated with the algorithms that constitute such platforms. In this course, we will review recent literature and conduct in-depth discussions on short- and medium-term risks to the online information ecosystem, and the student will engage in a targeted project to analyze social media discourse using machine learning, processing of natural language, complex networks, as well as ethical aspects linked to topics such as polarization, algorithmic bias and its implications for misinformation, echo chambers, hate speech, and conspiracy theories.

Graduate level *Deep Learning Algorithms* (XX students, co-instructed: 20%)
Deep Learning Algorithms learn representations of data at multiple levels, with each level explaining the data in a hierarchical fashion. Such algorithms have been effective in discovering underlying structure in data, for example, capabilities to discriminate between classes. They have been successful in many artificial intelligence problems, including image classification, speech recognition, and natural language processing.

	The course, which will be delivered through lectures and hands-on projects, will cover the underlying theory, the variety of applications to which it has been applied, and will emphasize learning using large datasets. The course will cover connectionist architectures commonly associated with deep learning such as, for example, basic neural networks, convolutional neural networks, and recurrent neural networks. Methods for training and optimizing architectures and methods for making effective inferences with them will be the main focus. Students will be encouraged to use open source software libraries such as Tensorflow.
	Undergraduate level *Computational Linear Algebra* (XX students)
	Developed as a permanent CS course in replacement to Numerical Analysis. Linear Algebra (LA) is at the core of many important machine learning (ML) techniques today. While most students take a linear algebra course early in their undergraduate studies, by the time they enroll in ML, Computer Vision and Deep Learning classes, they have a difficult time connecting the abstract concepts learned before with the methods used to learn from data, especially, in the light of new concerns such as numerical precision, stability and scalability. To address these issues, I helped develop this new course, which provides the basis required for a full understanding of key ML methods and applications. This course covers vectors spaces, orthogonal matrices, positive definite matrices, eigendecomposition, singular value decomposition, vector and matriz norms, linear regression, linear least squares, efficient computation of eigenvalues/singular values, iterative methods for solving linear systems. It also covers important CS applications, such as Pagerank, Principal Component Analysis and bias removal.
2021/1	Undergraduate level *Computational Linear Algebra* (66 students)
	Undergraduate level *Numerical Analysis* (71 students)
2020/2	Undergraduate level *Computational Linear Algebra* (85 students)
	Undergraduate level *Numerical Analysis* (54 students)
2020/1	Undergraduate level *Computational Linear Algebra* (67 students)
	Undergraduate level *Numerical Analysis* (74 students)
2019/2	Graduate level *Deep Learning Algorithms* (66 students, co-instructed: 20%)
	Graduate level *Model Thinking* (10 students, co-instructed: 33%)

	Building models to represent real world phenomenon allows us to reason about their outcomes, take informed decisions and design principled algorithms. This is a critical skill not only for STEM students and professionals, but also in social and life sciences. More generally, it enables any individual to be a better citizen of the world. This course is based on Scott Page's book *The Model Thinker: What You Need to Know to Make Data Work for You* and provides an overview of several types of models: Segregation and Peer Effects, Aggregation, Decision Models, Modeling People, Categorical and Linear Models, Tipping Points, Epidemiological Models, Diversity and Innovation, Markov Processes and Applications, Lyapunov Functions, Coordination and Culture, Path Dependence, Complex Networks, the Colonel Blotto Game, Randomness and Random Walks, Replicator Dynamics, Probabilistic Graphical Models and Time Series. Evaluation is based on seminar presentations and a course project.
	Undergraduate level *Numerical Analysis* (74 students)
2019/1	Graduate level *Seminar on Machine Learning for Graphs* (4 students)
	Many high impact social and computational phenomena take place over systems that can be naturally modeled as networks (e.g.: communication over the Internet, online social networking, fake news dissemination). In this seminar, we will cover state-of-the-art techniques developed for machine learning tasks in graphs (e.g., node classification, link prediction, community detection, etc). In the first part of the course, the instructor will give an overview of the field. In the second part, the students will present and discuss papers on: label propagation, node embeddings, graphs kernels, graph neural networks, graph bandits, active search & selective harvesting, and heuristics for link prediction. Optional topics include graph-based recommendation, graph-based text classification, probabilistic relational models, stochastic block models, influence maximization, etc.
	Undergraduate level *Computational Linear Algebra* (91 students)
2018/2	Graduate level *Model Thinking* (22 students, teaching load: 33%)
	Undergraduate level *Numerical Analysis* (2 classes: 71 + 47 students)
2018/1	Undergraduate level *Numerical Analysis* (2 classes: 48 + 60 students)
2017/2	Graduate level *Model Thinking* (15 students, co-instructed: 33%)
	Undergraduate level *Numerical Analysis* (2 classes: 44 + 40 students)
2017/1	Undergraduate level *Numerical Analysis* (2 classes: 39 + 54 students)

INVITED TALKS

2021	**(Invited Speaker/Virtual)** Online Seminars, Institute of Computing, UFF, Brazil, "How to use graphs to analyze political communities on Instagram and science in Brazil?", April 13th.
2020	**(Invited Lecturer)** Computing Summer School, Belo Horizonte, Brazil, "Who hid my graph? Inference from partially observed networks", February 20th.
2019	**(Invited Speaker)** Statistics Seminar, Dept. of Statistics, UFMG, Brazil, "Reasoning from Partially Observed Networks: Sampling, Estimation and Models", October 4th.
2018	**(Invited Speaker)** SmartData Research Group Seminar, Politecnico di Torino, Italy, "Reasoning from Partially Observed Networks: Sampling, Estimation and Models", December 12th.
	(Invited Lecturer) Computing Summer School, Belo Horizonte, Brazil, "Network Science: mathematics and algorithms", February 20th.
2016	**(Invited Lecturer)** REU Lunch Series, UMass Amherst, "Data Science for Networks", June 16th.

INTERDISCIPLINARY OUTREACH

M.S. Committee of Wesley Henrique Silva Pereira (Statistics, Denise Duarte, 2020)

M.S. Committee of Marina Alves Amorim (Statistics, Denise Duarte, 2020)

M.S. Qualifying Committee of Wesley Henrique Silva Pereira (Statistics, Denise Duarte, 2019)

M.S. Qualifying Committee of Marina Alves Amorim (Statistics, Denise Duarte, 2019)

UNIVERSITY ACTIVITIES

Computer Science Science Major:

Undergraduate core course development for the CS Major: Computational Linear Algebra (4 credits, required course) (2019/1)

Departamental Service:

Member, Computer Science Graduate Program Committee (2021–present)

Member, Departmental Committee (2019–2021)

Member, Advisory Board for the Information Systems Major (2017–2019)

Member, Ph.D. Admissions Committee (2021)

Chair, M.S. Admissions Committee for the Systems Area (2019)

Member, M.S. Admissions Committee (2017, 2018, 2019, 2021)

Chair, REU workshop evaluation committee (2018)

Member, University Undergraduate Exhibit evaluation committee (2018)

Member, University interchange program examining committee (2017)

Member, REU workshop evaluation committee (2017)

Ph.D. Committee Member:

Julio Cesar Soares dos Reis (CS, UFMG, Fabricio Benevenuto), 2020.

Ph.D. Proposal Committee Member:

External Member: Ronald Chiesse de Souza (Systems and Computer Engineering, UFRJ, Daniel Figueiredo), 2021.

Julio Cesar Soares dos Reis (CS, UFMG, Fabricio Benevenuto), 2019.

Rodrigo de Magalhães Silva (CS, UFMG, Marcos Gonçalves), 2019.

Edemir Ferreira de Andrade Junior (CS, UFMG, Jefersson Alex dos Santos), 2019.

M.S. Committee Member:

Filipe Barreto do Nascimento (CS, UFMG, Rodrygo dos Santos), 2021

External Member: Lucas Lopes Felipe (Informatics, UFRJ, Daniel Menasche), 2021.

Wesley Henrique Silva Pereira (Statistics, Denise Duarte), 2020.

Mariana Alves Amorim (Statistics, Denise Duarte), 2020.

Alexandre Maros (CS, UFMG, Jussara Almeira), 2019.

Túlio Braga Moreira Pinto (CS, UFMG, Jussara Almeira), 2019.

Tulio Lima Criscuolo (CS, UFMG, Wagner Meira Jr. and Renato Assunção), 2019.

Caio Cesar Viana da Silva (CS, UFMG, Jefersson dos Santos), 2019.

Lucas Henrique Costa de Lima (CS, UFMG, Fabricio Benevenuto), 2019.

Gabriel Lage Calegari (CS, UFMG, Ana Paula da Silva), 2019.

Tiago Pimentel Martins da Silva (CS, UFMG, Adriano Veloso), 2018.

Luis Fernando Miranda (CS, UFMG, Gisele Pappa), 2018.

Johnnatan Messias Peixoto Afonso (CS, UFMG, Fabricio Benevenuto), 2017.

M.S.. Proposal Committee Member:

External Member: Caio Lente (CS, USP, Roberto Hirata Jr.), 2021.

Wesley Henrique Silva Pereira (Statistics, UFMG, Denise Duarte), 2019.

Mariana Alves Amorim (Statistics, UFMG, Denise Duarte), 2019.

Student Engagement Talks:

(Invited Speaker) Undergraduate Research Engagement Course, 2017/1.

Outreach:

(Instructor) for 11 Data Science/ML workshops organized by Pluralsight for Microsoft Reactor Sao Paulo (2020–2021).

PROFESSIONAL ACTIVITIES

Technical Program Committees:

KDD 2019, 2020, 2021

ECML-PKDD 2021

WWW 2021

WI-IAT 2018, 2020

INFOCOM 2019, 2020, 2021

CSBC WPerformance 2017, 2018, 2019, 2020

Journal Reviewer:

Information Processing and Management (2020, 2021)

IEEE Access (2020, 2021)

Data and Knowledge Engineering (2021)

Brazilian Journal of Probability and Statistics (2021)

Computer Networks (2020)

ACM TOMPECS (2018, 2019)

Information Systems (2017)

Journal of Network and Systems Management (2017)

Professional Membership:
Association for Computing Machinery.

CURRENT & PAST GRANTS

Active grants: 6 grants (2x state-owned industry, 1x NPO, 2x private, 1x internationalization).
Total dollar amount in active grants with Murai as PI/CO-PI: $1,565,081.
Past grants: 3 grants (1x private, 1x internationalization, 1x EU-Brazil).

1.	Agency/Title of Grant:	PETROBRAS (Research Partnership): Artificial Intelligence applied to Oil Exploration in the pre-salt layer
2.	Duration of Funding:	Dec 2020 – Dec 2023
3.	Total Amount of Award:	$1,145,457
4.	Your Role:	(CO-PI)
5.	Percentage of funding responsible:	33%

1.	Agency/Title of Grant:	PETROBRAS (Training): Artificial Intelligence Applied to Geosciences Course
2.	Duration of Funding:	Jan 2021 – Dec 2023 (one 10-week course/year)
3.	Total Amount of Award:	$211,052
4.	Your Role:	(Coordinator)
5.	Percentage of funding responsible:	100%

1.	Agency/Title of Grant:	Serrapilheira Institute (Science Support Program): WildPixels: Dense Labeling of Remote Sensing Images in the Wild (competitive, 12 awarded/505)
2.	Duration of Funding:	Aug 2021 – Aug 2024
3.	Total Amount of Award:	$98,050
4.	Your Role:	(CO-PI)
5.	Percentage of funding responsible:	non-fixed percentage

1.	Agency/Title of Grant:	Inter Bank (InterMINDS Research Lab): Artificial Intelligence for Automatic Detection of Evidences of Money Laundering and Terrorist Financing
2.	Duration of Funding:	Aug 2021 – Feb 2022
3.	Total Amount of Award:	$23,925
4.	Your Role:	(PI)
5.	Percentage of funding responsible:	100%

1.	Agency/Title of Grant:	Usiminas (Training): Techonological Residency in Data Science
2.	Duration of Funding:	Sep 2021 – Jan 2023
3.	Total Amount of Award:	$83,795
4.	Your Role:	(Coordinator)
5.	Percentage of funding responsible:	100%

1.	Agency/Title of Grant:	CAPES/PrInt (Internationalization Program): Next Generation Graph Embeddings. UFMG & Purdue University (competitive).
2.	Duration of Funding:	Jun 2021 – Dec 2021
3.	Total Amount of Award:	$2,802
4.	Your Role:	(Coordinator)
5.	Percentage of funding responsible:	100%

1.	Agency/Title of Grant:	Minasligas (R&D, federal support via EMBRAPII): Machine Learning System for Predictive Maintenance.
2.	Duration of Funding:	Oct 2020 – Jun 2021
3.	Total Amount of Award:	$91,515
4.	Your Role:	(Collaborator)
5.	Percentage of funding responsible:	not applicable

1.	Agency/Title of Grant:	Compagnia di San Paolo (Internationalization): Artificial Intelligence for Spotting Fake Profiles and Anomalous Users' Behaviors on the Web. Politecnico di Torino & UFMG (competitive).
2.	Duration of Funding:	Jul 2018 – Jun 2019
3.	Total Amount of Award:	€47,386
4.	Your Role:	(Collaborator)
5.	Percentage of funding responsible:	not applicable

1.	Agency/Title of Grant:	European Union (Cooperation Programme, H-2020): ATMOSPHERE - Adaptive, Trustworthy, Manageable, Orchestrated, Secure, Privacy-assuring, Hybrid Ecosystem for REsilient Cloud Computing (competitive).
2.	Duration of Funding:	Nov 2017 – Oct 2019
3.	Total Amount of Award:	€1,102,849
4.	Your Role:	(Collaborator)
5.	Percentage of funding responsible:	not applicable

Last updated: September 1, 2021