

Curriculum Vitae

Antônio Horta Ribeiro

September 11, 2022

Current Position:

Postdoctoral Fellow
Uppsala University
Department of Information Technology,
Division of Systems and Control

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Academic Positions

Postdoctoral Fellow

DEPARTMENT OF INFORMATION TECHNOLOGY, UPPSALA UNIVERSITY

I am working under the supervision of Thomas Schön on the intersection of machine learning, signal processing, and control theory.

Fev. 2021 - Now

UPPSALA, SWEDEN

Postdoctoral Associate

DEPARTMENT OF COMPUTER SCIENCE, UFMG

I worked on developing new machine learning algorithms and studying its application to engineering and health care. My position was funded by the Brazilian Agency CAPES, through the institutional internalization program (PRINT).

Mar. 2020 - Fev. 2021

BELO HORIZONTE, BRASIL

Education

Ph.D., Electrical Engineering

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

I was supervised by Luis Antonio Aguirre and co-supervised by Thomas B. Schon. I stayed one year, from Sept. 2018 to Sept. 2019, as a guest doctoral student at Uppsala University (Sweden). My Thesis won the award of Best thesis in the Electrical Engineering department and also the best thesis in Engineering and Physical Sciences in the University.

Aug. 2017 - Mar. 2020

BRAZIL

M.Sc., Electrical Engineering

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

I was supervised by Luis Antonio Aguirre. I completed 25 credits the equivalent 375 hours in class and my grade pointed average was 5.0 out of 5.0.

Jan. 2016 - Jul. 2017

BRAZIL

B.S.E., Electrical Engineering

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

I completed a total of 240 credits (3600 class-hours). And obtained a grade pointed average 4.91 out of 5.00. That is the weighted average of my letter grade (A = 5; B = 4; C = 3; D = 2; E = 1; F = 0) according to the course number of credits.

Jan. 2016 - Jul. 2017

BRAZIL

Additional work experience

Software Developer

GOOGLE SUMMER OF CODE

I have successfully completed Google Summer of Code program under the mentorship of Matt Haberland, Nikolay Mayorov and Ralf Gommers. My project was the implementation of an interior-point solver for large-scale nonlinear programming problems. The result is the method trust-contr, now openly available as part of the open source scientific library SciPy, in Python.

May. 2017 - Aug. 2017

SCIPY

Hardware Team Intern

INVENT VISION

Jan. 2015 - Dec. 2015

BELO HORIZONTE, BRAZIL

I was part of the hardware development team and worked designing FPGA-based cameras. The major project I have worked on while there was the design and implementation of a stereo camera.

Undergraduate Researcher

Jun. 2013 - Jan. 2015

RESEARCH AND DEVELOPMENT PROJECT WITH PETROBRAS OIL COMPANY, UFMG

BELO HORIZONTE, BRAZIL

I worked on the development of methods for identification of oil well mathematical models under the supervision of Professor Luis Antonio Aguirre. My position was funded by the Petrobras Oil Company through the Christiano Ottoni Foundation (FCO) in the modality bolsa de iniciação científica.

Awards

Benzelius award

2022

ROYAL SOCIETY OF SCIENCES IN UPPSALA

SWEDEN

I was awarded the Benzelius Award (Benzeliusbelöningarna) due to my 'contributions to fundamental method development in machine learning and control technology, as well as its use to solve important problems in cardiology'. The prize is awarded yearly by the Royal Society of Sciences in Uppsala (Kungliga Vetenskaps-Societeten i Uppsala): the oldest of the royal academies in Sweden, founded in 1710. Named after Erik Benzelius, the prize is awarded to young researchers and comes with the amount of 25000 kronors.

Best Ph.D. Thesis in Engineering and Physical Sciences

2021

UNIVERSIDADE FEDERAL DE MINAS GERAIS

BELO HORIZONTE, BRAZIL

My Ph.D. thesis was awarded the best Ph.D. thesis defended in 2020 in engineering and physical sciences at the Universidade Federal de Minas Gerais (UFMG), Brazil. In portuguese: Grande Premio de Teses na área de ciências exatas e da terra e engenharias.

Best Ph.D. Thesis in Electrical Engineering

2021

UNIVERSIDADE FEDERAL DE MINAS GERAIS

BELO HORIZONTE, BRAZIL

My thesis was awarded the best Ph.D. thesis defended in 2020 in the Department of Electrical Engineering at the Universidade Federal de Minas Gerais (UFMG), Brazil. The thesis was then forwarded to compete with the thesis from all other Engineering and Physical Sciences departments at the university (where it was also awarded the best thesis, see the award above).

Young Author Award (Honorable Mention)

2021

19TH IFAC SYMPOSIUM ON SYSTEM IDENTIFICATION

ONLINE

I have been one of the three finalists of the Young Author Award with the paper 'Beyond Occam's Razor in System Identification: Double-Descent when Modeling Dynamics'.

Best Poster Award

2019

SCI-LIFE-LAB SCIENCE SUMMIT

UPPSALA, SWEDEN

I have been awarded the best poster award for the work 'Automatic Diagnosis of Short-Duration 12-Lead ECG using a Deep Convolutional Network'.

Travel Award

2018

MACHINE LEARNING FOR HEALTH (ML4H) WORKSHOP AT NEURIPS

MONTREAL, CANADA

I have been awarded the travel award for the work 'Automatic Diagnosis of Short-Duration 12-Lead ECG using a Deep Convolutional Network' and had my expenses covered by the award.

Scholarships

CAPES-PRINT

2020-2021

CAPES

BRAZIL

I have been granted a scholarship from the Brazilian Agency CAPES for internacionalization.

Split-site Ph.D. Scholarship

2019

CNPq

BRAZIL

I have been granted a scholarship from the Brazilian Agency CNPq for staying one year of my Ph.D. in Uppsala University, Sweden.

Ph.D. Scholarship

2018-2020

CNPq

BRAZIL

I have been granted a scholarship from the Brazilian Agency CNPq during my doctoral studies.

M.S. Scholarship

CAPES

I have been granted a scholarship from the Brazilian Agency CAPES during my master studies.

2016-2017

BRAZIL

Supervision

Ph.D. students, co-supervisor

Daniel Gedon

Aug. 2019 - Aug. 2024 (estimated)

UPPSALA UNIVERSITY, SWEDEN

Disentangled Representation Learning in Self-Supervised Models

M.Sc. students, supervisor

Oscar Larsson

Feb. 2022 - July 2022

UPPSALA UNIVERSITY, SWEDEN

Generation and Detection of Adversarial Attacks in the Power Grid

Theogene Habineza

Jan. 2022 - June 2022

UPPSALA UNIVERSITY, SWEDEN

Deep Learning-Based Risk Prediction of Atrial Fibrillation Using the 12-lead ECG

M.Sc. students, subject reviewer

Christie Courtnage

Jan. 2022 - June 2022

UPPSALA UNIVERSITY, SWEDEN

An extension to Semi-Supervised Learning using Shapley Value Data Valuation

Meenal Pathak

Feb. 2022 - Apr. 2022

UPPSALA UNIVERSITY, SWEDEN

Automated Accounting using Machine Learning

Teaching

Advanced Probabilistic Machine Learning

Fall - 2022

COURSE RESPONSIBLE - MSC LEVEL, 125 STUDENTS, 5 + 2.5 CREDITS

UPPSALA UNIVERSITY, SWEDEN

Artificial Intelligence and Machine Learning

Spring - 2022

TEACHING ASSISTANT - PHD LEVEL, 94 STUDENTS, 6 CREDITS

WASP GRADUATE SCHOOL, SWEDEN

Advanced Probabilistic Machine Learning

Fall - 2021

LECTURER - MSC LEVEL, 125 STUDENTS, 5 + 2.5 CREDITS

UPPSALA UNIVERSITY, SWEDEN

The unreasonable effectiveness of overparameterized machine learning models

Fall - 2021

COURSE ORGANIZER - PHD LEVEL, 13 STUDENTS, 3 CREDITS

UPPSALA UNIVERSITY, SWEDEN

Deep Learning

Spring - 2021

TEACHING ASSISTANT - PHD LEVEL, 54 STUDENTS, 5 + 3 CREDITS

UPPSALA UNIVERSITY, SWEDEN

Engenharia de Controle (Control Engineering)

2nd - 2016

TEACHING ASSISTANT - BSC LEVEL, 50 STUDENTS, 6 CREDITS

UNIVERSIDADE FEDERAL DE MINAS GERAIS, BRAZIL

Controle Digital (Digital Control)

2nd - 2016

TEACHING ASSISTANT - BSC LEVEL, 40 STUDENTS, 4 CREDITS

UNIVERSIDADE FEDERAL DE MINAS GERAIS, BRAZIL

Professional activity

Peer reviewing: journal papers

IEEE Transactions on Automatic Control (2021), *Heart* (2021), *IEEE Transactions on Instrumentation and Measurement* (2021), *International Journal of System Science* (2021), *Proceedings of the National Academy of Sciences (PNAS)* (2020), *Automatica* (2020), *IEEE Transactions on Biomedical Engineering* (2020), *IEEE Control Systems*

Letters (L-CSS) (2020), *Systems and Control Letters* (2020), *Chaos, Solutions and Fractals* (2020), *Chest* (2020), *Journal of Electrocardiology* (2020), *Journal of Control, Automation and Electrical Systems* (2015-2018),

Peer reviewing: conference papers

Learning for Dynamics and Control (L4DC) (2022), *International Conference on Artificial Intelligence and Statistics (AISTATS)* (2022), *IFAC Symposium on System Identification (SysId)* (2021), *Learning for Dynamics and Control (L4DC)* (2021), *European Control Conference (ECC)* (2021), *IEEE Conference on Decision and Control (CDC)* (2020), *IFAC World Conference* (2020), *American Control Conference* (2018), *International Conference on Modelling, Identification and Control* (2017), *IFAC World Conference* (2017),

Expert assignments

ELLIS (European Laboratory for Learning and Intelligent Systems) PhD Program: Recruitment evaluator 2020
Co-chair at the session ‘Parameter Estimation 1’ at the 19th IFAC Symposium on System Identification 2021

External examiner in Ph.D. and M.Sc. defenses

Najmeh Fayyazifar , Level: Ph.D. 2022
EDITH COWAN UNIVERSITY, AUSTRALIA
Deep learning and neural architecture search for cardiac arrhythmias classification

Thiago de Almeida Ushikoshi , Level: M.Sc. 2022
UNIVERSIDADE FEDERAL DE MINAS GERAIS, BRAZIL
Learning Nonlinear Dynamics With Echo State Networks

Invited talks

Universities

University of British Columbia, Canada @ Christos Thrampoulidis group (Online) June 2022
OVERPARAMETERIZED LINEAR REGRESSION UNDER ADVERSARIAL ATTACKS

University of Luxembourg @ Systems Control Group, LCSB (Online) March 2022
DEEP NEURAL NETWORKS FOR AUTOMATIC ECG ANALYSIS

Techinon, Israel @ AIMLab group (Online) March 2021
ARTIFICIAL INTELLIGENCE FOR ECG CLASSIFICATION AND PREDICTION OF THE RISK OF DEATH

Conferences

International Congress on Electrocardiology (Online) April 2021
ARTIFICIAL INTELLIGENCE FOR ECG CLASSIFICATION AND PREDICTION OF THE RISK OF DEATH

Open source contributions

Scipy team member 2017 - 2021
I was one of the SciPy development team members. SciPy is one of the core scientific libraries in Python and I was invited to the core team for having contributed with the implementation of signal filters and optimization method. My GitHub account: <https://github.com/antonior92> contain a complete list of my open-source contributions.

Publications

ORCID: 0000-0003-3632-8529
DBLP: 202/1699
SCOPUS ID: 57191699148 — Citations: 5920, h-index: 6 (2022-04-29)
Google Scholar: Antonio H. Ribeiro — Citations: 10290, h-index: 9, i10-index: 9 (2022-04-29)

Preprints

- [P1] **Antônio H. Ribeiro** and Thomas B. Schön. “Overparameterized Linear Regression under Adversarial Attacks”. In: *arXiv:2204.06274* (Apr. 2022). arXiv: 2204.06274.
- [P2] **Antônio H. Ribeiro**, Dave Zachariah, and Thomas B. Schön. “Surprises in Adversarially-Trained Linear Regression”. In: *arXiv:2205.12695* (May 2022). arXiv: 2205.12695.
- [P3] Veer Sangha, Arash A. Nargesi, Lovedeep S. Dhingra, Bobak J. Mortazavi, **Antônio H. Ribeiro**, Cynthia A. Brandt, Edward J. Miller, Antonio Luiz P. Ribeiro, Eric J. Velazquez, Harlan M. Krumholz, and Rohan Khera. “Detection of Left Ventricular Systolic Dysfunction from Electrocardiographic Images”. In: *medRxiv* (June 2022). DOI: 10.1101/2022.06.04.22276000.
- [P4] Eran Zvuloni, Jesse Read, **Antônio H. Ribeiro**, Antonio Luiz P. Ribeiro, and Joachim A. Behar. “On Merging Feature Engineering and Deep Learning for Diagnosis, Risk-Prediction and Age Estimation Based on the 12-Lead ECG”. In: *arXiv:2207.06096* (July 2022). arXiv: 2207.06096.
- [P5] Stefan Gustafsson, Daniel Gedon, Erik Lampa, **Antônio H. Ribeiro**, Martin J. Holzmänn, Thomas B. Schön, and Johan Sundstrom. “Artificial Intelligence-Based ECG Diagnosis of Myocardial Infarction in High-Risk Emergency Department Patients”. In: *SSRN* (June 2021). DOI: 10.2139/ssrn.3857655.

Journal Papers

- [J1] Veer Sangha, Bobak J. Mortazavi, Adrian D. Haimovich, **Antônio H. Ribeiro**, Cynthia A. Brandt, Daniel L. Jacoby, Wade L. Schulz, Harlan M. Krumholz, Antonio Luiz P. Ribeiro, and Rohan Khera. “Automated Multilabel Diagnosis on Electrocardiographic Images and Signals”. In: *Nature Communications* 13 (2022), p. 1583. DOI: 10.1038/s41467-022-29153-3.
- [J2] Shany Biton, Sheina Gendelman, **Antônio H. Ribeiro**, Gabriela Miana, Carla Moreira, Antonio Luiz P. Ribeiro, and Joachim A. Behar. “Atrial Fibrillation Risk Prediction from the 12-Lead ECG Using Digital Biomarkers and Deep Representation Learning”. In: *European Heart Journal - Digital Health* (2021). ISSN: 2634-3916. DOI: 10.1093/ehjdh/ztab071.
- [J3] Emilly M. Lima, **Antônio H. Ribeiro**, Gabriela MM Paixão, Manoel Horta Ribeiro, Marcelo M. Pinto Filho, Paulo R. Gomes, Derick M. Oliveira, Ester C. Sabino, Bruce B. Duncan, Luana Giatti, Sandhi M. Barreto, Wagner Meira, Thomas B. Schön, and Antonio Luiz P. Ribeiro. “Deep Neural Network Estimated Electrocardiographic-Age as a Mortality Predictor”. In: *Nature Communications* 12 (2021). DOI: 10.1038/s41467-021-25351-7.
- [J4] Gabriela M. M. Paixão, Emilly M. Lima, Paulo R. Gomes, Derick M. Oliveira, Manoel H. Ribeiro, Jamil S. Nascimento, **Antonio H. Ribeiro**, Peter W. Macfarlane, and Antonio L. P. Ribeiro. “Electrocardiographic Predictors of Mortality: Data from a Primary Care Tele-Electrocardiography Cohort of Brazilian Patients”. In: *Hearts* 2.4 (Dec. 2021), pp. 449–458. DOI: 10.3390/hearts2040035.
- [J5] Wagner Meira Jr, Antonio L. P. Ribeiro, Derick M. Oliveira, and **Antonio H. Ribeiro**. “Contextualized Interpretable Machine Learning for Medical Diagnosis”. In: *Communications of the ACM* (2020). DOI: 10.1145/3416965.
- [J6] Gabriela M. M. Paixão, Luis Gustavo S. Silva, Paulo R. Gomes, Emilly M. Lima, Milton P. F. Ferreira, Derick M. Oliveira, Manoel H. Ribeiro, **Antonio H. Ribeiro**, Jamil S. Nascimento, Jéssica A. Canazart, Leonardo B. Ribeiro, Emelia J. Benjamin, Peter W. Macfarlane, Milena S. Marcolino, and Antonio L. Ribeiro. “Evaluation of Mortality in Atrial Fibrillation: Clinical Outcomes in Digital Electrocardiography (CODE) Study”. In: *Global Heart* 15.1 (July 2020), p. 48. ISSN: 2211-8179. DOI: 10.5334/gh.772.
- [J7] **Antônio H. Ribeiro**, Manoel Horta Ribeiro, Gabriela M. M. Paixão, Derick M. Oliveira, Paulo R. Gomes, Jéssica A. Canazart, Milton P. S. Ferreira, Carl R. Andersson, Peter W. Macfarlane, Wagner Meira Jr., Thomas B. Schön, and Antonio Luiz P. Ribeiro. “Automatic Diagnosis of the 12-Lead ECG Using a Deep Neural Network”. In: *Nature Communications* 11.1 (2020), p. 1760. DOI: 10.1038/s41467-020-15432-4. arXiv: 1904.01949.
- [J8] **Antônio H. Ribeiro**, Koen Tiels, Jack Umenberger, Thomas B. Schön, and Luis A. Aguirre. “On the Smoothness of Nonlinear System Identification”. In: *Automatica* 121 (Nov. 2020), p. 109158. DOI: 10.1016/j.automatica.2020.109158. arXiv: 1905.00820.

- [J9] Pauli Virtanen, Ralf Gommers, Travis E. Oliphant, Matt Haberland, Tyler Reddy, David Cournapeau, Evgeni Burovski, Pearu Peterson, Warren Weckesser, Jonathan Bright, Stéfan J. van der Walt, Matthew Brett, Joshua Wilson, K. Jarrod Millman, Nikolay Mayorov, Andrew R. J. Nelson, Eric Jones, Robert Kern, Eric Larson, C. J. Carey, İlhan Polat, Yu Feng, Eric W. Moore, Jake VanderPlas, Denis Laxalde, Josef Perktold, Robert Cimrman, Ian Henriksen, E. A. Quintero, Charles R. Harris, Anne M. Archibald, **Antônio H. Ribeiro**, Fabian Pedregosa, Paul van Mulbregt, and SciPy 1.0 Contributors. “SciPy 1.0—Fundamental Algorithms for Scientific Computing in Python”. In: *Nature Methods* 17.3 (2020), pp. 261–272. DOI: 10.1038/s41592-019-0686-2. arXiv: 1907.10121.
- [J10] Gabriela M. M. Paixão, Emilly M. Lima, Paulo R. Gomes, Milton P. Ferreira, Derick M. Oliveira, Manoel Horta Ribeiro, **Antônio H. Ribeiro**, Jamil Nascimento, Jéssica A. Canazart, Gustavo Cardoso, Leonardo B. Ribeiro, and Antonio Luiz P. Ribeiro. “Evaluation of Mortality in Bundle Branch Block Patients from an Electronic Cohort: Clinical Outcomes in Digital Electrocardiography (CODE) Study”. In: *Journal of Electrocardiology* (Sept. 2019). ISSN: 0022-0736. DOI: 10.1016/j.jelectrocard.2019.09.004.
- [J11] Antonio Luiz P. Ribeiro, Gabriela M. M. Paixão, Paulo R. Gomes, Manoel Horta Ribeiro, **Antônio H. Ribeiro**, Jéssica A. Canazart, Derick M. Oliveira, Milton P. Ferreira, Emilly M. Lima, Jermana Lopes de Moraes, Nathalia Castro, Leonardo B. Ribeiro, and Peter W. MacFarlane. “Tele-Electrocardiography and Bigdata: The CODE (Clinical Outcomes in Digital Electrocardiography) Study”. In: *Journal of Electrocardiology* (Sept. 2019). ISSN: 0022-0736. DOI: 10/gf7pwg.
- [J12] **Antônio H. Ribeiro** and Luis A. Aguirre. “Parallel Training Considered Harmful?": Comparing Series-Parallel and Parallel Feedforward Network Training”. In: *Neurocomputing* 316 (Nov. 2018), pp. 222–231. ISSN: 0925-2312. DOI: 10.1016/j.neucom.2018.07.071.

Conference Papers

- [C1] Johannes N. Hendriks, Fredrik K. Gustafsson, **Antônio H. Ribeiro**, Adrian G. Wills, and Thomas B. Schön. “Deep Energy-Based NARX Models”. In: *Proceedings of the 19th IFAC Symposium on System Identification (SYSID) - IFAC-PapersOnLine* 54.7 (2021), pp. 505–510. DOI: 10.1016/j.ifacol.2021.08.410. arXiv: 2012.04136.
- [C2] **Antonio H. Ribeiro** and Thomas B. Schon. “How Convolutional Neural Networks Deal with Aliasing”. In: *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. IEEE, 2021, pp. 2755–2759. DOI: 10.1109/ICASSP39728.2021.9414627.
- [C3] **Antônio H. Ribeiro**, Johannes N. Hendriks, Adrian G. Wills, and Thomas B. Schön. “Beyond Occam’s Razor in System Identification: Double-Descent When Modeling Dynamics”. In: *Proceedings of the 19th IFAC Symposium on System Identification (SYSID) - IFAC-PapersOnLine*. Vol. 54. Elsevier, 2021, pp. 97–102. DOI: 10.1016/j.ifacol.2021.08.341. arXiv: 2012.06341.
- [C4] Derick M. Oliveira, **Antônio H. Ribeiro**, João A. O. Pedrosa, Gabriela M.M. Paixao, Antonio Luiz P. Ribeiro, and Wagner Meira Jr. “Explaining End-to-End ECG Automated Diagnosis Using Contextual Features”. In: *Machine Learning and Knowledge Discovery in Databases. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*. Vol. 12461. Lecture Notes in Computer Science}. Ghent, Belgium: Springer, Sept. 2020, pp. 204–219. DOI: 10.1007/978-3-030-67670-4_13.
- [C5] **Antônio H. Ribeiro**, Koen Tiels, Luis A. Aguirre, and Thomas B. Schön. “Beyond Exploding and Vanishing Gradients: Attractors and Smoothness in the Analysis of Recurrent Neural Network Training”. In: *Proceedings of the 23rd International Conference on Artificial Intelligence and Statistics (AISTATS), PMLR*. Vol. 108. 2020, pp. 2370–2380. arXiv: 1906.08482.
- [C6] Carl Andersson, **Antônio H. Ribeiro**, Koen Tiels, Niklas Wahlström, and Thomas B. Schön. “Deep Convolutional Networks in System Identification”. In: *Proceedings of the 58th IEEE Conference on Decision and Control (CDC)* (Sept. 2019), pp. 3670–3676. DOI: 10.1109/CDC40024.2019.9030219. arXiv: 1909.01730.
- [C7] **Antonio H. Ribeiro** and Luis A. Aguirre. “Lasso Regularization Paths for NARMAX Models via Coordinate Descent”. In: *2018 Annual American Control Conference (ACC)*. June 2018, pp. 5268–5273. ISBN: 2378-5861. DOI: 10.23919/ACC.2018.8430924.

- [C8] **Antônio H. Ribeiro** and Luis A. Aguirre. “Shooting Methods for Parameter Estimation of Output Error Models”. In: *Proceedings of the 20th IFAC World Congress. IFAC-PapersOnLine* 50.1 (July 2017), pp. 13998–14003. ISSN: 2405-8963. DOI: 10.1016/j.ifacol.2017.08.2421.
- [C9] **Antônio H. Ribeiro** and Luis A. Aguirre. “Selecting Transients Automatically for the Identification of Models for an Oil Well”. In: *Proceedings of the 2nd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production. IFAC-PapersOnLine* 48.6 (2015), pp. 154–158. DOI: 10.1016/j.ifacol.2015.08.024.

Workshop papers, conference abstracts and extended abstracts

- [W1] Daniel Gedon, Stefan Gustafsson, Erik Lampa, **Antônio H. Ribeiro**, Martin J. Holzmann, Thomas B. Schön, and Johan Sundström. “ResNet-based ECG Diagnosis of Myocardial Infarction in the Emergency Department”. In: *Machine Learning from Ground Truth: New Medical Imaging Datasets for Unsolved Medical Problems Workshop at NeurIPS*. 2021.
- [W2] Daniel Gedon, **Antônio H. Ribeiro**, Niklas Wahlström, and Thomas B. Schön. “First Steps Towards Self-Supervised Pretraining of the 12-Lead ECG”. In: *Computing in Cardiology (CinC)*. Vol. 48. Sept. 2021, pp. 1–4. DOI: 10.23919/CinC53138.2021.9662748.
- [W3] Johannes N. Hendriks, Fredrik K. Gustafsson, **Antônio H. Ribeiro**, Adrian G. Wills, and Thomas B. Schön. “Deep Energy-Based NARX Models”. In: *Workshop on Nonlinear System Identification* (2021).
- [W4] **Antonio H Ribeiro** and Thomas B Schön. “Overparametrized Regression Under L2 Adversarial Attacks”. In: *Workshop on the Theory of Overparameterized Machine Learning (TOPML)*. Apr. 2021.
- [W5] **Antônio H. Ribeiro**, Johannes N. Hendriks, Adrian G. Wills, and Thomas B. Schön. “Beyond Occam’s Razor in System Identification: Double-Descent When Modeling Dynamics”. In: *Workshop on Nonlinear System Identification*. 2021.
- [W6] Derick M Oliveira, **Antonio H Ribeiro**, Joao A O Pedrosa, Gabriela M M Paixao, Antonio L Ribeiro, and Wagner Meira Jr. “Explaining Black-Box Automated Electrocardiogram Classification to Cardiologists”. In: *2020 Computing in Cardiology (CinC)*. Vol. 47. 2020. DOI: 10.22489/CinC.2020.452.
- [W7] **Antonio H Ribeiro**, Daniel Gedon, Daniel Martins Teixeira, Manoel Horta Ribeiro, Antonio L Pinho Ribeiro, Thomas B Schon, and Wagner Meira Jr. “Automatic 12-Lead ECG Classification Using a Convolutional Network Ensemble”. In: *2020 Computing in Cardiology (CinC)*. 2020. DOI: 10.22489/CinC.2020.130.
- [W8] **Antonio H Ribeiro**, Carl Andersson, Koen Tiels, Niklas Wahlstrom, and Thomas B Schon. “Deep Convolutional Networks Are Useful in System Identification”. In: *Workshop on Nonlinear System Identification* (2019).
- [W9] Gabriela Paixao, Luis Gustavo Silva e Silva, Paulo R. Gomes, Milton Ferreira, Derick Oliveira, Manoel Horta Ribeiro, **Antonio H. Ribeiro**, Jamil Nascimento, Gustavo Cardoso, Rodrigo Araujo, Bruno Santos, Jessica Canazart, Leonardo Ribeiro, and Antonio L. Ribeiro. “Clinical Outcomes in Digital Electrocardiography: Evaluation of Mortality in Atrial Fibrillation (Code Study)”. In: *Circulation. Abstracts from American Heart Association’s*. 138.Suppl.1 (Nov. 2018), A16594–A16594.
- [W10] **Antônio H. Ribeiro**, Manoel Horta Ribeiro, Gabriela Paixão, Derick Oliveira, Paulo R. Gomes, Jéssica A. Canazart, Milton Pifano, Wagner Meira Jr., Thomas B. Schön, and Antonio Luiz Ribeiro. “Automatic Diagnosis of Short-Duration 12-Lead ECG Using a Deep Convolutional Network”. In: *Machine Learning for Health (ML4H) Workshop at NeurIPS* (2018). arXiv: 1811.12194.

National Conference Papers (in Portuguese)

- [N1] **Antônio H. Ribeiro** and Luis A. Aguirre. “Relações Estáticas de Modelos NARX MISO e Sua Representação de Hammerstein”. In: *XX Congresso Brasileiro de Automática*. 2014.

Thesis

- [T1] **Antônio H. Ribeiro**. “Learning Nonlinear Differentiable Models for Signals and Systems: With Applications”. PhD thesis. Belo Horizonte, Brazil: Universidade Federal de Minas Gerais, 2020.
- [T2] **Antônio H. Ribeiro**. “Recurrent Structures in System Identification”. MSc Dissertation. Belo Horizonte, Brazil: Universidade Federal de Minas Gerais, 2017.
- [T3] **Antonio H. Ribeiro**. “Implementação de Uma Câmera Estéreo”. BSc Thesis. Belo Horizonte, Brazil: Universidade Federal de Minas Gerais, Dec. 2015.

Additional education

Mini-course on Nonlinear System Identification

2019

EINDHOVEN UNIVERSITY OF TECHNOLOGY

THE NETHERLANDS

I took part on the 3 days mincourse on nonlinear system identification to take place on Eindhoven University of Technology.

Probabilistic Graphical Models Specialization

2018

COURSERA (STANFORD)

ONLINE

I have successfully completed the 3 online courses about probabilistic graphical models, titled ‘Representation’, ‘Inference’, ‘Learning’.

Deep Learning Specialization

2018

COURSERA (DEEPLARNING.AI)

ONLINE

I have successfully completed the 5 online courses about deep learning offered in Coursera, ‘Neural Networks and Deep Learning’, ‘Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization’, ‘Structuring Machine Learning Projects’, ‘Convolutional Neural Networks’, ‘Sequence Models’.

Languages

Portuguese (mother tongue)

English (fluent)

Spanish (intermediate knowledge)

Swedish (elementary knowledge)

Language certificates

Certificate in Advanced English (Council of Europe Level C1) - Cambridge English Language Assessment, 2014