

# Curriculum Vitae

Antônio Horta Ribeiro

January 19, 2023

**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

*Fev. 2021 - Now*

UPPSALA, SWEDEN

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

**Postdoctoral Associate**

DEPARTMENT OF COMPUTER SCIENCE, UFMG

*Mar. 2020 - Fev. 2021*

BELO HORIZONTE, BRASIL

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).

## Education

**Ph.D., Electrical Engineering**

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

*Aug. 2017 - Mar. 2020*

BRAZIL

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.

**M.Sc., Electrical Engineering**

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

*Jan. 2016 - Jul. 2017*

BRAZIL

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.

**B.S.E., Electrical Engineering**

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG)

*Jan. 2016 - Jul. 2017*

BRAZIL

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.

## Additional work experience

**Software Developer**

GOOGLE SUMMER OF CODE

*May. 2017 - Aug. 2017*

SCIPY

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.

**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-Descend 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**

### **ELISE mobility grant**

*2023*

EUROPEAN NETWORK OF AI EXCELLENCE CENTRES

EUROPE

I have been granted for a research visit to Francis Bach group at ENS/INRIA during Spring 2023

### **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**

CNPq

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

2018-2020

BRAZIL

**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****Johan Millberg***Jan. 2023 - June 2022 (estimated)*

UPPSALA UNIVERSITY, SWEDEN

Evaluating clusters of financial time series

**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

**Seminars on Advances in Probabilistic Machine Learning @ Aalto University and ELLIS unit Helsinki**  
November 2022 - ADVERSARIAL ATTACKS IN LINEAR REGRESSION

**University of British Columbia, Canada @ Christos Thrampoulidis group (Online)** June 2022 - OVER-PARAMETERIZED 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.

## 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

COURSEERA (STANFORD)

ONLINE

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

### Deep Learning Specialization

2018

COURSEERA (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

# Publication List

**ORCID:** 0000-0003-3632-8529

**DBLP:** 202/1699

**SCOPUS ID:** 57191699148 — Citations: 7651, h-index: 7, Documents: 23 (2022-09-12)

**Google Scholar:** Antonio H. Ribeiro — Citations: 13217, h-index: 11, i10-index: 12 (2022-09-15)

## Preprints

- [P1] Lei Lu, Tingting Zhu, **Antônio H. Ribeiro**, Lei Clifton, Erying Zhao, Antonio Luiz P. Ribeiro, Yuan-Ting Zhang, and David A. Clifton. “Knowledge Discovery with Electrocardiography Using Interpretable Deep Neural Networks”. In: *medRxiv* (Nov. 2022), p. 2022.11.01.22281722. DOI: 10.1101/2022.11.01.22281722.
- [P2] **Antônio H. Ribeiro** and Thomas B. Schön. “Overparameterized Linear Regression under Adversarial Attacks”. In: *arXiv:2204.06274* (Apr. 2022).
- [P3] **Antônio H. Ribeiro**, Dave Zachariah, and Thomas B. Schön. “Surprises in Adversarially-Trained Linear Regression”. In: *arXiv:2205.12695* (May 2022).
- [P4] 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.
- [P5] Philipp Von Bachmann, Daniel Gedon, Fredrik K. Gustafsson, **Antônio H. Ribeiro**, Erik Lampa, Stefan Gustafsson, Johan Sundström, and Thomas B. Schön. “ECG-Based Electrolyte Prediction: Evaluating Regression and Probabilistic Methods”. In: *arXiv:2212.13890* (Dec. 2022). DOI: 10.48550/arXiv.2212.13890.
- [P6] 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).

## Journal Papers

- [J1] Stefan Gustafsson, Daniel Gedon, Erik Lampa, **Antônio H. Ribeiro**, Martin J. Holzmänn, Thomas B. Schön, and Johan Sundström. “Development and Validation of Deep Learning ECG-based Prediction of Myocardial Infarction in Emergency Department Patients”. In: *Scientific Reports* 12.1 (Nov. 2022), p. 19615. DOI: 10.1038/s41598-022-24254-x.
- [J2] 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.
- [J3] 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). DOI: 10.1093/ehjdh/ztab071.
- [J4] 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.
- [J5] 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.

- [J6] 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.
- [J7] 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. DOI: 10.5334/gh.772.
- [J8] **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.
- [J9] **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.
- [J10] 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.
- [J11] 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). DOI: 10.1016/j.jelectrocard.2019.09.004.
- [J12] 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). DOI: 10/gf7pwwg.
- [J13] **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. 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.
- [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.



- [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.
- [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.
- [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. 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. 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 and Conference 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).

## National Conference Papers (in Portuguese)

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