

# FRANCISCO DE ASSIS BOLDT

Associate Professor - Machine Learning Researcher

@ franciscoa@ufes.edu.br @ fboldt@gmail.com +55 (27) 99846-2872 Vitória, Brazil  
fboldt.github.io @franciscoboldt linkedin.com/in/fboldt github.com/fboldt



## RESEARCH INTERESTS

Machine Learning Deep Learning Automatic Fault Diagnosis  
Signal Processing Natural Language Processing Forecasting

## EXPERIENCE

Associate Professor

Instituto Federal de Educação, Ciência e Tecnologia do Espírito Santo

March 2004 – Ongoing

Serra-ES

- Machine Learning Researcher
- Research Project Coordinator
- Lecturer and advisor for the Professional Master Course in Applied Computing

Partner

Coopen - Colatina

Jan 2001 – Jan 2002

Colatina-ES

- Teacher of informatics, developer and programmer

Teacher

Cefetes - Colatina

July 1999 – Dec 2000

Colatina-ES

- High-school teacher of Informatics

## PROJECTS

Automated Bibliometrics

Fapes/ufes

Coordinator

July 2019 – June 2021

Serra-ES

Search, select and compile scientific and technical information about some field of study. Apply the automated method to collect data about reuse of ornamental rock waste.

Compilation of real datasets for fault diagnosis

Ifes

Coordinator

August 2019 – July 2020

Serra-ES

Select public available datasets used for automatic fault diagnosis. Compile the most important datasets and explain how to use them. Develop a framework that applies machine learning methods to the selected datasets.

Defect Pattern Recognition in Centrifugal Pump Systems

Petrobras/Ufes

Researcher

2011-2014

Vitória-ES

This project used computational intelligence techniques to identify defect patterns in submerged centrifugal pumping systems during the testing and acceptance phase of this system.

## EDUCATION

Ph.D. in Computer Science

Universidade Federal do Espírito Santo

Dec 2012 – July 2017

Vitória-ES

Classifier Ensemble Feature Selection for Automatic Fault Diagnosis

M.Sc. in Informatics

Universidade Federal do Espírito Santo

Feb 2006 – June 2008

Vitória-ES

Specialization in Systems Development with Java

Universidade Federal do Espírito Santo

Feb 2005 – June 2006

Vitória-ES

Tech. in Data Processing

Unesc

Aug 1995 – July 1998

Colatina-ES

## LANGUAGES

Portuguese ●●●●●

English ●●●●●

German ●●●●●

Spanish ●●●●●

## REFEREES

Prof. Thomas Walter Rauber

@ Universidade Federal do Espírito Santo

thomas@inf.ufes.br

Prof. Flávio Miguel Varejão

@ Universidade Federal do Espírito Santo

fvarejao@inf.ufes.br

Prof. Karsten Berns

@ University of Kaiserslautern

berns@informatik.uni-kl.de

## PUBLICATIONS

### Journal Articles

- Assis Boldt, Francisco de, Thomas W Rauber, and Flavio M Varejao (2017). "Cascade feature selection and elm for automatic fault diagnosis of the tennessee eastman process". In: *Neurocomputing* 239, pp. 238–248.
- Assis Boldt, Francisco de, Thomas Walter Rauber, and Flávio Miguel Varejão (2014). "A fast feature selection algorithm applied to automatic faults diagnosis of rotating machinery". In: *Journal of Applied Computing Research* 3.2, pp. 78–86.
- Rauber, Thomas W, Francisco de Assis Boldt, and Flávio Miguel Varejão (2014). "Heterogeneous feature models and feature selection applied to bearing fault diagnosis". In: *IEEE Transactions on Industrial Electronics* 62.1, pp. 637–646.

### Conference Proceedings

- D. N. Santos, Alter, Francisco Boldt, and Richard Godinez Tello (2018). "Uma Avaliação do Desempenho de Uma Rede Neural Extreme Learning Machine (ELM) aplicado a Sinais de Eletromiografia de Superfície (sEMG)". in: *XXII Congresso Brasileiro de Automática 2018, João Pessoa, Brazil*.
- D. N. Santos, Alter, Rodrigo P. Capucho, et al. (2018). "An Evaluation of an Adapted Extreme Learning Machine (ELM) Neural Network applied to Hand Gesture Recognition from Two Channels sEMG". in: *I Congresso de Tecnologia da Informação do IFSUL - Passo Fundo, Brasil*.
- P. Capucho, Rodrigo, Francisco Boldt, and Richard. Godinez Tello (2018). "Reconhecimento de Sequência de Movimentos de uma Mão a partir de Sensores Inerciais para o Controle de uma Cadeira de Rodas Robotizada". In: *I Congresso de Tecnologia da Informação do IFSUL - Passo Fundo, Brasil*.
- Assis Boldt, Francisco de, Thomas Walter Rauber, Thiago Oliveira-Santos, et al. (2017). "Binary feature selection classifier ensemble for fault diagnosis of submersible motor pump". In: *2017 IEEE 26th International Symposium on Industrial Electronics (ISIE)*. IEEE, pp. 1807–1812.
- Rauber, Thomas Walter et al. (2017). "Kernel and random extreme learning machine applied to submersible motor pump fault diagnosis". In: *2017 International Joint Conference on Neural Networks (IJCNN)*. IEEE, pp. 3347–3354.
- Assis Boldt, Francisco de, Thomas W Rauber, and Flávio M Varejao (2015). "Single sequence fast feature selection for high-dimensional data". In: *2015 IEEE 27th International Conference on Tools with Artificial Intelligence (ICTAI)*. IEEE, pp. 697–704.
- Assis Boldt, Francisco de, Thomas W Rauber, Flávio M Varejão, and Marcos Pellegrini Ribeiro (2015). "Fast feature selection using hybrid ranking and wrapper approach for automatic fault diagnosis of motorpumps based on vibration signals". In: *2015 IEEE 13th International Conference on Industrial Informatics (INDIN)*. IEEE, pp. 127–132.
- Assis Boldt, Francisco de, Thomas W Rauber, Flávio M Varejão, et al. (2014). "Performance analysis of extreme learning machine for automatic diagnosis of electrical submersible pump conditions". In: *2014 12th IEEE International Conference on Industrial Informatics (INDIN)*. IEEE, pp. 67–72.
- Assis Boldt, Francisco de, Thomas W Rauber, and Flávio M Varejão (2014). "Evaluation of the extreme learning machine for automatic fault diagnosis of the tennessee eastman chemical process". In: *IECON 2014-40th Annual Conference of the IEEE Industrial Electronics Society*. IEEE, pp. 2551–2557.

## EDITORIAL MEMBER

Progress in Human Computer Interaction

## PEER REVIEWING

### Journals

IEEE Transactions on Industrial Electronics

IEEE Access

International Journal of Acoustics and Vibration

IET Science, Measurement and Technology

IET Computer Vision

### Conferences

CBA2018-22º Congresso Brasileiro de Automática

CBA2016-21º Congresso Brasileiro de Automática

## AWARDS



### Best Paper

2018 - I Congresso de Tecnologia da Informação, IFSUL - Passo Fundo, IFSUL



### Best Paper

2013 - Conferência IADIS Ibero-Americana Computação Aplicada 2013, International Association for Development of Information Society.

## ACADEMIC ADVISORY

Master in Applied Computing

Instituto Federal do Espírito Santo

 April 2019 –

 Serra-ES

Carlos Henrique Gomes Correia.

Lucio Antonio Stange Venturim.

Bachelor in Systems Information

Instituto Federal do Espírito Santo

 April 2019 –

 Serra-ES

Andre Barbosa da Vitoria

- Boldt, Francisco de A, Thomas W Rauber, and Flávio M Varejão (2013). "Feature Extraction and Selection for Automatic Fault Diagnosis of Rotating Machinery". In: *X Encontro Nacional de Inteligência Artificial e Computacional (ENIAC)*.
- Rauber, Thomas W et al. (2013a). "Computational intelligence for automatic diagnosis of submersible motor pump conditions in offshore oil exploration". In: *2013 IEEE 20th International Conference on Electronics, Circuits, and Systems (ICECS)*. IEEE, pp. 477–480.
- – (2013b). "Feature models and condition visualization for rotating machinery fault diagnosis". In: *2013 IEEE 20th International Conference on Electronics, Circuits, and Systems (ICECS)*. IEEE, pp. 265–268.