Eric A. Antonelo

Personal

Website ericantonelo.com

LinkedIn www.linkedin.com/in/ericantonelo

G.Scholar scholar.google.com/citations?user=fSiq-2kAAAAJ (h-index: 11; i10-index: 13)

Education

2007–2011 **Ph.D. in Computer Engineering / Machine learning**, *Ghent University*, Ghent, Belgium. Public defense: 28 October 2011.

2004–2006 **M.Sc. in Computer Systems Engineering**, *Halmstad University*, Halmstad, Sweden, *Highest grade for dissertation.*
- Specialization in Intelligent Systems.
- Title of thesis: *A Neural Reinforcement Learning Approach for Behavior Acquisition in Intelligent Autonomous Systems.*
- Supervisors: Albert-Jan Baerveldt, and Thorsteinn Rögnvaldsson.

2000–2004 **B.Sc. in Computer Science**, *State University of Maringá*, Maringá, Brazil, *Highest grade for dissertation.*
- Specialization in Computer Systems. Participation in 14 conferences/meetings.
- Title of monography: Sistemas autônomos inteligentes em navegação de robôs: aquisição de conceitos espaciais e discriminação de objetos.
- Supervisor: Mauricio Fernandes Figueiredo.

Ph.D. thesis

title *Reservoir Computing Architectures for Modeling Robot Navigation Systems*

supervisor Benjamin Schrauwen

summary This thesis proposes a new efficient and biologically inspired way of modeling navigation tasks for autonomous mobile robots having restrictions on cost, energy consumption, and computational complexity (such as household and assistant robots). It is based on the recently proposed Reservoir Computing approach for training Recurrent Neural Networks. Publications can be downloaded at: `http://ericantonelo.com/publications`

keywords *recurrent neural networks, supervised and unsupervised learning, reinforcement learning, robot behavior learning, robot localization*

Complementary Education

2017 **RLSS: Reinforcement Learning Summer School**, *University of Montreal*, Montreal, Canada, *Duration: approx. 30h.*

2017 **DLSS: Deep Learning Summer School**, *University of Montreal*, Montreal, Canada, *Duration: approx. 40h.*

2011 **ISSPR: International Summer School on Pattern Recognition**, *University of Plymouth*, Plymouth, UK, *Duration: approx. 40h.*

2009 **RLSS09: Robot Learning Summer School**, *Instituto Superior Técnico de Lisboa*, Lisbon, Portugal, *Duration: 35h.*

2007 **Interdisciplinary College - Embodied Minds**, *Fraunhofer IAIS*, Gunne, Germany, *Duration: approx. 40h.*

2001 **Inteligência Computacional**, *State University of Maringá*, Maringá, PR, Brazil, *Duration: 30h.*

Academic Experience

2016-Present **Senior Research Associate (Post-doc)**, *University of Luxembourg*, Luxembourg.
Design of machine learning methods for **fraud detection** (non-technical losses) in energy distribution networks in a colaboration between private company and university. (**Python**, **numpy**, sklearn, and own custom ML code). Research on reinforcement learning for real-world problems (e.g., digital advertising) and on **GANs** in **pyTorch**. Mentoring of Ph.D. students.

2012-2016 **Post-doc researcher**, *Federal University of Santa Catarina - UFSC*, Florianópolis, Brazil.
Research on **RNNs** for modeling of autonomous robots, of soft sensors in oil and gas industry, for fault detection in fleet of city buses and detection of steady-state during tests in refrigeration compressors (industrial colaboration: PETROBRAS and EMBRACO). Supervisor of students/interns. Examiner on undergraduate projects. Reviewer for journals (IEEE Trans. on NN, etc.) and AI conferences.

2012–2015 **Assistant lecturer**, *Department of Automation and Systems, Federal Univ. of Santa Catarina (UFSC)*, Florianópolis, Brazil.
- Undergraduate: Artificial intelligence applied to Control and Automation (logic, regression, classification, Bayesian networks, neural networks);
- Graduate: Machine learning (Regression, Classification, Bayesian learning).

2007–2011 **Ph.D. Researcher**, *Ghent University*, Ghent, Belgium.
Research on reservoir computing (RNN) for robot navigation (*intelligent system design*), with several publications in international journals (3) and conferences (10). Presenter/listener in 15 worldwide conferences/workshops, as well as in meetings of European research projects. Scientific reviewer for AI conferences and for the journal **Artificial Intelligence** in Medicine. Co-supervisor of 5 Master students. Webmaster of university websites.

2003–2003 **President of the Student's Board**, *CACCOM*, Maringá, Brazil.
President of the Student's Board of the Bachelor course in Computer Science (CACCOM), State University of Maringá (UEM).

2001–2004 **Intern**, *PET Informatica UEM, State University of Maringá*, Maringá, Brazil.
Involved actively on research, education and voluntary work activities.
Organization of scientific and student events. Participation in several local and national scientific conferences. Worked also as webmaster.

Software Development / Consulting

URL: , `http://ericantonelo.com/portfolio/general`.

2017 **Software developer**, *TigerAI.*
Behavioral Intruder Detection for Mobile Banking. Own customized new implementation of a **Neural Network** for biometrical intruder detection (in **Python**). **Android** app interface development (in **Java**).

2017 **Software developer**, *NatVim Marketplace.*
Marketplace for natural products, Back-end and front-end development in **Ruby on Rails**.

2015– Present **Founder, Developer**, *NatVim*, http://natvim.com.
RoR-based vertical search engine for natural and alternative treatments for diseases and health-related articles. Roles: Crawler and Full stack development (Back-end and Front-end).

2012– Present **Founder, Developer**, *Imofox*, http://imofox.com.br.
RoR-based vertical web search portal for real estate properties to sell or to rent in Brazil. Roles: Crawler and Full stack development (Back-end and Front-end).

2009–2013 **Founder, Developer**, *Imohoo*, http://imohoo.com.br.
Drupal-based (**PHP**) vertical search engine of real estate properties in Brazil, achieved almost 1 million page views/month by April 2011. Roles: Crawler, and Full stack development, SEO, marketing, and integration to other services.

2005–2005 **Consultant**, *EKA Chemicals*, Halmstad/Gothenburg, Sweden.
Data mining on chemical process multi-variate data with machine learning tools (MLP, SVM). Worked for 2 months with Prof. Thorsteinn Rognvaldsson from Halmstad University.

2001–2008 **Software developer**, *SINAR simulator*.
Simulation environment for autonomous mobile robots (**C++** and **Qt** in Linux).

2004 **Software developer**, *Game interface*.
GUI interface for multi-player game for cell phones. Written in **Java**.

Other Academic Experience

Minicourses, Seminars and Invited Talks

2017 **Instructor**, *Minicourse on Echo State Networks*, Halmstad University, Sweden.
Introduction to ESNs; ESN-based architectures; Practical Guide on Applying ESNs; and practical hands-on session (Python and Organic toolbox).

2017 **Speaker**, *Generative Adversarial Networks*, University of Luxembourg.
Introduction to GANs; Improved techniques (batch normalization, feature matching, semi-supervised learning; minibatch discrimination); conditional GANs; InfoGAN (Information Maximizing GANs); pyTorch code.

2006 **Speaker**, *Encontro Mineiro de Estudantes de Computação*, Itajubá, MG, Brazil.
Talk: Redes Neurais e Suas Aplicações.

Master thesis co-supervisor

2018 Jean P. Jordanou. Online feedback control with Reservoir Computing networks. Undergraduate student in Control and Automation, Federal University of Santa Catarina, Florianópolis, Brazil

2010 Ken Caluwaerts. Design of a biologically inspired navigation system for the Psikharpax rodent robot. (Master in Computer Engineering) - Universiteit Gent, Belgium.

2009 Dries Van Puymbroeck. Robot Navigation and Localization using Reservoir Computing. (Master in Computer Engineering) - Universiteit Gent, Belgium.

2009 Tim Waegeman. Modeling Multiple Behaviors with Reservoir Computing for Autonomous Mobile Robots. (Master in Computer Engineering) - Universiteit Gent, Belgium.

2008 Karel Braeckman. Localization of a mobile robot using Reservoir Computing. (Master in Computer Engineering) - Universiteit Gent, Belgium.

2008 Stijn Adam. Reservoir Computing for robotics. (Master in Computer Engineering) - Universiteit Gent, Belgium.

Supervisor for undergraduate research/internships

2015 Jean P. Jordanou. Online feedback control with Reservoir Computing networks. Undergraduate student in Control and Automation, Federal University of Santa Catarina, Florianópolis, Brazil

2015 Marcelo Menezes Morato. Controle um de Pêndulo Duplo Invertido com Redes de Estados de Eco. Undergraduate student in Control and Automation, Federal University of Santa Catarina, Florianópolis, Brazil

2011 Stefan Depeweg. Simulation of robotic experiments in Webots using Reinforcement learning with Reservoir Computing. Visiting student at Ghent University, Belgium.

Member of Examiners board for final undergraduate course projects

2015 Gustavo de Souza Satyro. Implementação de um sistema de detecção de peças de vestuário através de imagens. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

2014 Ricardo Santos da Silva. Identificação de Sistemas Dinâmicos Não Lineares Utilizando Métodos de Colocação. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

2014 Victor Gomes de Oliveira. Análise e Proposição de Melhorias no Processo de Gestão de Projetos e de Desenvolvimento de Software - Um Estudo de Caso. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

2014 Alexandre Costa Cordeiro. Dyfocus: Desenvolvimento do Back-End de um Aplicativo Mobile para Smartphone. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

2014 Luciano Araujo do Nascimento. Estudo e Estruturação de Logística Interna para Processo de Rota de Coleta de Produtos. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

2013 Leandro Biasi Ferlin. Development of Software to Predict Road Information using Map Data. (Control and Automation Engineering) Federal University of Santa Catarina, Florianópolis, Brazil.

Member of Scientific committees - serving as Reviewer

Journals

2014-Present IEEE Transactions on Neural Networks and Learning Systems

2016 Neural Computing and Applications

2013 IEEE Robotics and Automation Magazine

2013 Revista de Ciências Exatas e Naturais

2009-2011 Artificial Intelligence in Medicine

2012 Transportation Reseach, Part C: Emerging Technologies

Conferences

2015 2nd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production

2014 XXVII Concurso de Teses e Dissertações da SBC (CTD 2014)

2008-2014 IEEE International Joint Conference on Neural Networks (IJCNN)

2012-2014 Latin American Robotics Symposium / Brazilian Robotics Symposium (LARS/SBR)

2012 International Conference on Neural Information Processing (ICONIP)

2009 International Conference on Intelligent Robots and Systems (IROS)

Member of organizing committee of Conferences and Workshops

2015 2nd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production. May, 27-29, 2015 in Florianópolis, Brazil.

2014 SEPEX - UFSC. Semana de Ensino, Pesquisa e Extensão. (Exposition).

2013 SEPEX - UFSC. Semana de Ensino, Pesquisa e Extensão. (Exposition).

2012 SEPEX - UFSC. Semana de Ensino, Pesquisa e Extensão. (Exposition).

2002 IV Fórum de Informática e Tecnologia de Maringá. (Congress).

2001 III Fórum de Informática e Tecnologia de Maringá. (Congress).

Participation in Congresses, Symposiums, and Conferences with Oral/Poster Presentation

2015 International Conference on Artificial Neural Networks (ICANN). Recurrent Dynamical Projection for Time series-based Fraud detection. 2017. (Congress). Alghero, Italy.

2016 V Oil and Gas Production Optimization Workshop. Dynamical neural networks for data-driven soft-sensor modeling in oil wells. 2016. (Workshop). CENPES-Petrobras, Rio de Janeiro, Brazil.

2015 16th Int. Conf. on Engineering Applications of Neural Networks. An Echo State Network-based Soft Sensor of Downhole Pressure for a Gas-lift Oil Well. 2015. (Congress). Island of Rhodes, Greece.

2015 2nd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production. System Identification of a Vertical Riser Model with Echo State Networks. (Congress). Florianópolis, Brazil.

2011 X Brazilian Congress on Computational Intelligence - CBIC 2011. Learning navigation attractors for mobile robots with reinforcement learning and reservoir computing. (Congress). Fortaleza, Brazil.

2010 IEEE International Conference on Robotics and Automation (ICRA). Supervised learning of internal models for autonomous goal-oriented robot navigation using Reservoir Computing. (Congress). Anchorage, Alaska.

2009 International Conference on Artificial Neural Networks (ICANN). Unsupervised Learning in Reservoir Computing: Modeling Hippocampal Place Cells for Small Mobile Robots. (Congress). Limassol, Cyprus.

2009 IEEE International conference on Systems, Man, and Cybernetics. Towards autonomous self-localization of small mobile robots using reservoir computing and slow feature analysis. (Congress). San Antonio, Texas, USA.

2009 Brazilian Congress on Neural Networks (CBRN). On different learning approaches with echo state networks for localization of small mobile robots.(Congress). Ouro Preto, MG, Brazil.

2008 IEEE International Conference on Man, Systems and Cybernetics. Modeling Multiple Autonomous Robot Behaviors and Behavior Switching with a Single Reservoir Computing Network. (Congress). Singapore.

2008 IEEE International Conference on Robotics and Automation (ICRA). Mobile Robot Control in the Road Sign Problem using Reservoir Computing Networks. (Congress). Pasadena, CA, USA.

2008 10th Brazilian Symposium on Neural Networks (SBRN). Imitation Learning of an Intelligent Navigation System for Mobile Robots using Reservoir Computing. (Congress). Salvador, Brazil.

2007 International Conference on Artificial Neural Networks (ICANN). Event detection and localization in mobile robot navigation using reservoir computing.(Congress). Porto, Portugal.

2007 VIII Brazilian Congress on Neural Networks (CBRN). Experiments with Reservoir Computing on the road sign problem. (Congress). Florianópolis, Brazil.

2006 IEEE International Joint Conference on Neural Networks - World Congress on Computational Intelligence.Modular Neural Network and Classical Reinforcement Learning for Autonomous Robot Navigation: Inhibiting Undesirable Behaviors. (Congress). Vancouver, Canada.

2005 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation.Intelligent autonomous navigation for mobile robots: spatial concept acquisition and object discrimination. (Symposium). Helsinki, Finland.

2005 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation. Evolutionary fuzzy system for architecture control in a constructive neural network. (Symposium). Helsinki, Finland.

2003 55ª Reunião Anual da SBPC. Sistemas Autônomos Inteligentes Dotados de Memória Associativa em Navegação Autônoma de Robôs. (Congress). (Poster presentation) Recife, Brazil.

2003 Ciclo de Seminários do PET Informática. Navegação de Robôs Móveis utilizando Sistemas Autônomos Inteligentes Dotados de Memória de Curta Duração.(Seminar). Maringá, PR, Brazil.

2002 XI Encontro Anual de Iniciação Científica. Estruturas Neurais para Modelagem de Memórias Biológicas Declarativas Aplicadas a Sistemas Autônomos de Navegação de Robôs. Brazil.

2002 IV Fórum de Informática e Tecnologia de Maringá. Estruturas Neurais para Modelagem de Memórias Biológicas Declarativas Aplicadas a Sistemas Autônomos de Navegação de Robôs. Maringá, PR, Brazil.

2002 Visita à UEM (evento aberto à sociedade). Memória Associativa para Reconhecimento de Padrões. Maringá, Brazil.

2001 III Fórum de Informática e Tecnologia de Maringá. Estruturas Neurais para Modelagem de Memórias Declarativas Biológicas. (Conference). (Poster presentation). Maringá, Brazil.

2001 X Encontro Anual de Iniciação Científica. Estruturas Neurais para Modelagem de Memórias Declarativas Biológicas. (Meeting). Ponta Grossa, PR, Brazil.

Participation in Congresses, Symposiums, Conferences as Listener

2009 European Symposium on Neural Networks (ESANN). (Symposium). Bruges, Belgium.

2008 European Symposium on Neural Networks (ESANN). (Symposium). Bruges, Belgium.

2007 European Symposium on Neural Networks (ESANN). (Symposium). Bruges, Belgium.

2005 Primeira Conferência AlBan. (Congress). Valencia, Spain.

2003 XXIII Congress of the Brazilian Society for Computing. (Congress). Recife, Brazil.

2002 7º Encontro Nacional dos Grupos PET's. (Meeting). Salvador, Brazil.

2001 IX Escola de Informática da SBC-Sul. (Congress). (Member of Supporting Committee). Maringá, PR, Brazil.

2001 I Seminário Nacional do Programa Especial de Treinamento. (Meeting). Curitiba, Brazil.

2001 VI Encontro Nacional dos Grupos PET. (Meeting). Goiânia, GO, Brazil.

2000 II Fórum de Informática e Tecnologia de Maringá. (Congress). Maringá, PR, Brazil.

Academic Production

Member of research project

1 **ORGANIC: Self-Organized Recurrent Neural Learning for Language Processing**.
Collaborator. European Union project. EU FP-7, ICT Challenge 2: Cognitive Systems, Interaction, Robots. Coordinator: Herbert Jaeger, Jacobs University Bremen. Website: `http://reservoir-computing.org/organic`.

2 **Sistemas de Navegação Autônoma e Inteligência Computacional: Aprendizagem e Comportamento Coletivo**.
Collaborator. Partner institutions: UEM, Unicamp. Financial support: CNPq.

Publications

In Press.

1. Jordanou, J. P. and Camponogara, E. and **Antonelo, E. A.** and de Aguiar, M. A. (In Press). Nonlinear Model Predictive Control of an Oil Well with Echo State Networks. In *3rd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production*.

Journal publications.

1. **Antonelo, E. A.** and Flesch, C. (2018). Reservoir Computing for Detection of Steady State in Performance Tests of Compressors. *Neurocomputing*, 275:598-607.

2. **Antonelo, E. A.** and Camponogara, E. and Foss, B. (2017). Echo State Networks for Data-driven Downhole Pressure Estimation in Gas-lift Oil Wells. *Neural Networks*, 85:106-117.

3. **Antonelo, E. A.** and Schrauwen, B. (2015). On learning navigation behaviors for small mobile robots with reservoir computing architectures. *IEEE Transactions on Neural Networks and Learning Systems*, 26(4):763-780

4. **Antonelo, E. A.** and Schrauwen, B. (2012). Learning slow features with reservoir computing for biologically-inspired robot localization. *Neural Networks*, 25:178–190.

5. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2008). Event detection and localization for small mobile robots using reservoir computing. *Neural Networks*, 21:862–871.

6. **Antonelo, E. A.**, Schrauwen, B., and Campenhout, J. V. (2007). Generative modeling of autonomous robots and their environments using reservoir computing. *Neural Processing Letters*, 26(3):233–249.

Full peer-reviewed papers presented in international conferences .
by Antonelo, E. A. when marked with *

1. Jordanou, J. P. and **Antonelo, E. A.** and Camponogara, E. and de Aguiar, M. A. (2017) Recurrent Neural Network based control of an Oil Well. In *Proceedings of the XIII Brazilian Symposium on Intelligent Automation (SBAI), Porto Alegre, Brazil.*

2. **Antonelo, E. A.** and State, R. (2017). Recurrent Dynamical Projection for Time series-based Fraud detection. In *International Conference on Artificial Neural Networks (ICANN). Lecture Notes in Computer Science, 10614:503–511 .* *

3. Fan, Y. and Nowaczyk, S. and Rognvaldsson, T. and **Antonelo, E. A.**. (2016). Predicting Air Compressor Failures with Echo State Networks. In *Third European Conference of the Prognostics and Health Management Society.*

4. **Antonelo, E. A.**, Camponogara, E., and Plucenio, A. (2015). System Identification of a Vertical Riser Model with Echo State Networks In *2nd IFAC Workshop on Automatic Control in Offshore Oil and Gas Production.* *

5. **Antonelo, E. A.**, Camponogara, E. (2015). An Echo State Network-based Soft Sensor of Downhole Pressure for a Gas-lift Oil Well. In *16th Int. Conf. on Engineering Applications of Neural Networks.* *

6. **Antonelo, E. A.**, Depeweg, S., and Schrauwen, B. (2011). Learning navigation attractors for mobile robots with reinforcement learning and reservoir computing. In *Proceedings of the X Brazilian Congress on Computational Intelligence (CBIC).* *

7. **Antonelo, E. A.** and Schrauwen, B. (2010). Supervised learning of internal models for autonomous goal-oriented robot navigation using reservoir computing. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA).* *

8. **Antonelo, E. A.** and Schrauwen, B. (2009). Towards autonomous self-localization of small mobile robots using reservoir computing and slow feature analysis. In *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, pages 3818–3823. *

9. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2009). Unsupervised learning in reservoir computing: Modeling hippocampal place cells for small mobile robots. In *ICANN '09: Proceedings of the 19th International Conference on Artificial Neural Networks*, volume 5768, pages 747–756, Berlin, Heidelberg. Springer-Verlag. *

10. Waegeman, T., **Antonelo, E. A.**, wyffels, F., and Schrauwen, B. (2009). Modular reservoir computing networks for imitation learning of multiple robot behaviors. In *Proc. of the IEEE Int. Symp. on Computational Intelligence in Robotics and Automation (CIRA).*

11. **Antonelo, E. A.** and Schrauwen, B. (2009). On different learning approaches with echo state networks for localization of small mobile robots. In *Proceedings of the Brazilian Congress on Neural Networks (CBRN).* *

12. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2008). Modeling multiple autonomous robot behaviors and behavior switching with a single reservoir computing network. In *Proceedings of the IEEE International Conference on Man, Systems and Cybernetics (SMC).* *

13. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2008). Mobile robot control in the road sign problem using reservoir computing networks. In *Proceedings of the IEEE Int. Conf. on Robotics and Automation (ICRA).* *

14. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2008). Imitation learning of an intelligent navigation system for mobile robots using reservoir computing. In *Proceedings of the 10th Brazilian Symposium on Neural Networks (SBRN).* *

15. **Antonelo, E. A.**, Schrauwen, B., Dutoit, X., Stroobandt, D., and Nuttin, M. (2007). Event detection and localization in mobile robot navigation using reservoir computing. In de et al., J. M., editor, *ICANN, Part II*, pages 660–669. Springer-Verlag. *

16. **Antonelo, E. A.**, Schrauwen, B., and Stroobandt, D. (2007). Experiments with reservoir computing on the road sign problem. In *Proceedings of the VIII Brazilian Congress on Neural Networks (CBRN).* *

17. **Antonelo, E. A.**, Baerlvedt, A.-J., Rognvaldsson, T., and Figueiredo, M. (2006). Modular neural network and classical reinforcement learning for autonomous robot navigation: Inhibiting undesirable behaviors. In *Proceedings of the International Joint Conference on Neural Networks (IJCNN)*, pages 498– 505, Vancouver, Canada. *

18. **Antonelo, E. A.**, Figueiredo, M., Baerlvedt, A.-J., and Calvo, R. (2005). Intelligent autonomous navigation for mobile robots: spatial concept acquisition and object discrimination. In *Proceedings of the 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA)*, pages 553–557, Helsinki, Finland. *

19. Calvo, R., Figueiredo, M., and **Antonelo, E. A.** (2005). Evolutionary fuzzy system for architecture control in a constructive neural network. In *Proceedings of the 6th IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA).* *

Full peer-reviewed papers presented in national conferences.

1. **Antonelo, E. A.** and Figueiredo, M. F.(2004). Sistemas autônomos inteligentes em navegação de robôs: Aquisição de conceitos espaciais e discriminação de objetos. In *Proceedings of the II Workshop on Intelligent Robotics (EnRI) - Brazilian Computing Society Congress.*

2. **Antonelo, E. A.** and Figueiredo, M. F.(2002). Estruturas neurais para modelagem de memórias biológicas declarativas aplicadas a sistemas autônomos de navegação de robôs. In *Anais do IV Fórum de Informática e Tecnologia de Maringá.* *

Published Abstracts presented in conferences.

1. **Antonelo, E. A.** and Figueiredo, M. F.(2007). A Step Towards Autonomy in Robotics via Reservoir Computing In *NIPS 2007 Workshop: Robotics Challenges for Machine Learning, Vancouver.* *

2. **Antonelo, E. A.** and Figueiredo, M. F.(2003). Sistemas autônomos inteligentes dotados de memória associativa em navegação autônoma de robôs. In *Anais da 55ª Reunião Anual da SBPC, Recife.* *

3. **Antonelo, E. A.** and Figueiredo, M. F.(2003). Memória associativa de curta duração para solução de problemas em controle autônomo de robôs móveis. In *Anais do XII Encontro Anual de Iniciação Científica, Foz do Iguaçu.* *

4. **Antonelo, E. A.** and Figueiredo, M. F.(2002). Estruturas neurais para modelagem de memórias biológicas declarativas aplicadas a sistemas autônomos de navegação de robôs. In *Anais do XI Encontro Anual de Iniciação Científica, Maringá.* *

5. **Antonelo, E. A.** and Figueiredo, M. F.(2001). Estruturas neurais para modelagem de memórias declarativas biológicas. In *Anais do III Fórum de Informática e Tecnologia de Maringá.* *

6. **Antonelo, E. A.** and Figueiredo, M. F.(2001). Estruturas neurais para modelagem de memórias declarativas biológicas. In *Anais do X Encontro Anual de Iniciação Científica, Ponta Grossa.* *

Specialities

Machine learning — Regression, Classification and Clustering techniques such as (Recurrent) Neural Networks, Support Vector Machines, etc. for **pattern recognition** and multi-variate **data mining**. Others: **Unsupervised learning**, ICA, SVD, PCA (Dimensionality reduction), **Reinforcement Learning**, Generative Adversarial Networks, Anomaly detection, Covariate shift adaptation for biased datasets.

Programming Languages — **Python**, **Ruby**, **C/C++**, **Julia**, **Matlab**, Java/Android, PHP, MySQL, jQuery/Javascript, HTML, XML, CSS.

Others — ML toolboxes (**pyTorch**, **sklearn**, **TensorFlow**, Organic), **NumPy**, **SciPy**, Solr, NLP (basic), **Regular expressions**, **Ruby on Rails**, Drupal, Linux (git, shell script, etc.), Latex. **Deep learning**@udacity (partially attended).

Scholarships and Awards

2017-2019 **FNR AFR-PPP award**, *Postdoc in University of Luxembourg, Luxembourg.*
Fonds National de la Recherche - Public Private Partnership research.

2012-2015 **CNPq/CAPES scholarship award**, *Postdoc in UFSC, Brazil.*

2007-2011 **BOF scholarship award**, *Ph.D. in Ghent University.*
Belgium Special Research Fund for developing countries.

2004-2006 **Alban scholarship award**, *M.Sc. in Halmstad University.*
Programme Alban is the European Union Programme of High Level Scholarships for Latin America (www.programalban.org). Rank: 77 out of 779 awarded applications.

2001-2004 **PET Scholarship award**, *B.Sc. in State University of Maringá.*
Tutorial Education Program scholarship - SESu (Education funding agency of the Brazilian Ministry of Education).

2003 **PosComp grade: 45**, *Brazilian Society for Computing*, Average grade: 29,23.

2001 **3rd place in Mostra de Trabalhos de Informática de Maringá**, *Universidade Estadual de Maringá.*

1999 **1st place in *Vestibular***, *State University of Maringá*, Maringá, Brazil.
First place in the examination for admission to the Bachelor course in Computer Science.

Languages

English	Fluent	*Used on a daily basis for more than 7 years in international environments.*
Portuguese	Fluent	*Native mother tongue.*
Dutch	Advanced	*Advanced listening and reading. Limited conversation ability.*
Italian / French	Basic	

Interests

autonomous robots, **machine learning**, **RNNs**, **reinforcement and deep learning**, artificial intelligence, data science, web technologies, entrepreneurship, international environments, philosophy, and exercising.