Carlos Bentes

I am an electronic engineer with experience in software development and neural networks. My objective is to work as a software developer in machine learning and data analysis.

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Technical Skills

- Experience with Deep Neural Networks, SVMs, Ensembling.
- Development of image processing and data analysis algorithms.
- Dataset management with NoSQL and Python.

Tools: Python (Numpy, Pandas, Scikit-learn, Theano, Keras, Matplotlib)
R, C/C++, Java, IDL, HTML, JavaScript, MySQL, MongoDB, KML, Git, PHP, Bootstrap, Linux.

Experience

German Aerospace Center (DLR)
Research Assistant
Bremen, Germany
April 2013 - Present

Improvement of ship detection algorithms in SAR images.
Target classification with Deep Neural Networks.
Data fusion and contextual analysis for maritime applications.
Environment: Python (Numpy, Pandas, Scikit-learn, Theano, Keras, Matplotlib), MongoDB.

Touch Tecnologia
Software Developer
Sao Jose dos Campos, Brazil
2011 - 2012

Developed software for on-line booking, medical procedure auto-scheduling, and resource management of hospital/health-care centers.
Environment: Java, JavaScript, JQuery, HTML, Eclipse, MySQL.

Orbisat da Amazonia
Software Developer
Sao Jose dos Campos, Brazil
2009 - 2010

Implemented and optimized image processing algorithms in Synthetic Aperture Radar (SAR) images.
Developed web applications to support operational field campaigns.
Environment: C/C++, IDL, Java, JavaScript, JBoss Seam, Eclipse, MySQL, Linux.

Google
Intern
Belo Horizonte, Brazil
2008 - 2008

IT residency with focus on project and analysis of algorithms, computer architecture, and C++ programming.
Developed a web search engine prototype composed of three basic modules: Crawler, Indexer, Search.
Environment: C/C++, Linux, Eclipse.

Orbisat da Amazonia
Intern
Sao Jose dos Campos, Brazil
2007 - 2007

Developed and implemented Hardware Interfaces in VHDL to optimize Synthetic-Aperture Radar (SAR) image processing.
Developed Linux Device Driver for PCI hardware communication on FPGA.
Performed Software-Hardware integration, debugging and profiling analysis.
Environment: C/C++, VHDL, FPGA.

Education

- **Master of Science in Electronics and Computer Engineering**
  Technological Institute of Aeronautics (ITA) - SP, Brazil 2009 - 2012
  Thesis: "Dynamic Formation and UAV Swarm Navigation with Artificial Potential Fields".

- **Bachelor in Electronic Engineering**
  Technological Institute of Aeronautics (ITA) - SP, Brazil 01/2003 - 12/2007
  Final project: "Development of a vector co-processor in VHDL".

Languages

- Native Language: **Portuguese**

- Other Languages:

	Interaction	Reading	Listening	Writing	Usage
English	C1	C1	C1	C1	Every Day
German	A2	B1	B1	A2	Every Day
Estonian	A1	A1	A1	A1	Every Day

Awards and Certificates

- **DAAD Scholarship Award** - Deutscher Akademischer Austausch Dienst (DAAD) - 2013/2016

- **SCJP - Java SE 6 Programmer** - Oracle - 2010

Publications

Carlos Bentes, Domenico Velotto, Bjorn Tings, "Target Classification in Oceanographic SAR Images with Deep Neural Network", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, (submitted).

Domenico Velotto, Carlos Bentes, Bjorn Tings, Susanne Lehner, "First Comparison of Sentinel-1 and TerraSAR-X Data in the Framework of Maritime Targets Detection: South Italy Case", IEEE Journal of Oceanic Engineering (JOE), (submitted).

Bjorn Tings, Carlos Bentes, Susanne Lehner, "Dynamically adapted ship parameter estimation using TerraSAR-X images", International Journal of Remote Sensing, 2015.

Carlos Bentes, Anja Frost, Domenico Velotto, Bjorn Tings, "Ship-Iceberg Discrimination with Convolutional Neural Networks in High Resolution SAR Images", European Conference on Synthetic Aperture Radar (EUSAR), Hamburg, Germany, 2016 (submitted).

Carlos Bentes, Domenico Velotto, Susanne Lehner, "Target Classification in Oceanographic SAR Images with Deep Neural Networks: Architecture and Initial Results", International Geoscience and Remote Sensing Symposium (IGARSS), Milan, Italy, 2015.

Domenico Velotto, Carlos Bentes, Bjorn Tings, Susanne Lehner, "Comparison of Sentinel-1 and TerraSAR-X for Ship Detection", International Geoscience and Remote Sensing Symposium (IGARSS), Milan, Italy, 2015.

Domenico Velotto, Carlos Bentes, Susanne Lehner, "Ship and Maritime target observation campaigns using available C and X Band SAR satellite", International Workshop on Science and Applications of SAR Polarimetry and Polarimetric Interferometry (POLinSAR), Frascati, Italy, 2015.

Carlos Bentes, Bjorn Tings, Susanne Lehner, "Ship Detection on Wide ScanSAR TerraSAR-X Images", European Conference on Synthetic Aperture Radar (EUSAR), Berlin, Germany, 2014.

Carlos Bentes, Domenico Velotto, Susanne Lehner, "Analysis of ship size detectability over different TerraSAR-X modes", International Geoscience and Remote Sensing Symposium (IGARSS), Quebec City, Canada, 2014.

Carlos Bentes, Osamu Saotome, "Dynamic Swarm Formation with Potential Fields and A* Path Planning in 3D Environment", Robotics Symposium and Latin American Robotics Symposium (SBR-LARS), Fortaleza, Brazil, 2012.

Interests

In my free time I like to explore on-line courses on different subjects (at Coursera and Udacity), and to have fun with Kaggle competitions. I also dedicate my time to my family and hobbies: photography, music, dance, cook, swim.