Thalles Santos Silva

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https://github.com/thalles753

Formal Education/academic degrees

Period	**July 2009 — December 2014**
Degree	**Bachelor in Computer Science**
Universities	**The State University of Santa Cruz** Ilhéus, Brazil
	Algoma University Sault Ste Marie, Canada
Exchange	**Science Without Borders** - *1.5 year scholarship from the Brazilian Government.*

- Three years as **Student Researcher** sponsored by Research Support Foundation of the State of Bahia – FAPESB.
- **Theses in Computer Science:** Parallel Processing Using Hybrid Techniques for Applications in Transport of Particles based on Monte Carlo method. Technologies: NVIDIA CUDA, OpenMP e MPI.
- **EasyKanban (2012)**. Web-based application for project management. *Awarded First Prize in Computer Science Software Engineering Class Contest.*
- **Wrote Application for compressing and encrypting text files** using Huffman algorithm which can reduce file's size up to 60%. *Awarded First Prize in Computer Science Programming Class Contest*, (2010).
- **Awarded First Prize in Computer Science AI class tournament** for multi-agent combat using the Gun-Tactx Platform.

Complementary Education

Period	**April 2016 — September 2016**
Degree	**Udacity Machine Learning Engineer Nanodegree** - *Code available on github*

- Designed and developed various Deep Convolutional Network model for recognizing sequences of digits on street view images. Deployed several techniques for dataset synthetically increase and analysis.
- Applied reinforcement learning to build a simulated vehicle navigation agent. This project involved modeling a complex control problem in terms of limited available inputs, and designing a scheme to automatically learn an optimal driving strategy based on rewards and penalties.
- Reviewed unstructured data to understand the patterns and natural categories that the data fits into. Used multiple algorithms and both empirically and theoretically compared and contrasted their results. Made predictions about the natural categories of multiple types in a dataset, then checked these predictions against the result of unsupervised analysis.
- Investigated the factors that affect a student's performance in high school. Trained and tested several supervised machine learning models on a given dataset to predict how likely a student is to pass. Selected the best model based on relative accuracy and efficiency.
- Built a model to predict the value of a given house in the Boston real estate market using various statistical analysis tools. Identified the best price that a client can sell their house utilizing machine learning.

Period	**2013 — 2014**
Degree	**English as a Second Language (ESL)**
University	**Algoma University** Sault Ste Marie, Canada
Scholarship	**Science Without Borders**

- 3 months English course as part of my split-site undergraduate program in Computer Science granted by The Brazilian National Council for Scientific and Technological Development - CNPq.

Period	**2010 - 2010**
Degree	**Programming for High Performance Platforms**
University	**The State University of Santa Cruz** Ilhéus, Brazil

- Developed many parallel programs using (OpenMP, MPI) aimed to extract the maximum performance from the Data Storage and Advanced Computing platform - CACAU (http://nbcgib.uesc.br/cacau/).

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Period	**2010 - 2010**
Degree	**Linux Study Group**
University	**The State University of Santa Cruz** Ilhéus, Brazil

- Contributed with the first Linux study group at The State University of Santa Cruz, giving and attending to some presentations on some of the basic Linux concepts.

Research Projects

Period	**2010 - 2013**
University	**The State University of Santa Cruz** Ilhéus, Brazil
Advisor	**Esbel Tomás Valero Orellana** CV: *http://lattes.cnpq.br/8384020879567133*
Funding Institution	**Research Support Foundation of the State of Bahia – FAPESB**

- **Title** - Parallel processing on high performance stations applied to particle transport simulation using the Monte Carlo method *(2012 - 2013)*.
- **Title** - Parallel processing using Graphics processing units(GPUs) applied to particle transport simulation with the Monte Carlo method *(2011 - 2012)*.
- **Title** - Parallel implementations for Random Walk Algorithms - **Volunteer** *(2010 - 2011)*.

Areas of Expertise

1. Artificial Intelligence.
2. Deep Learning / Machine Learning.
3. High Parallel Computing.

Productions/Presentations in Events

Period	**2011 - 2013**
University	**The State University of Santa Cruz** Ilhéus, Brazil
Advisor	**Esbel Tomás Valero Orellana** CV: *http://lattes.cnpq.br/8384020879567133*
Keywords	**Random Walk, CUDA, OpenMP, MPI**

- **Parallel implementations of Random Walk Algorithm**
  The State University of Santa Cruz - UESC - XVIII Scientific Seminar (2012).
- **Parallel implementations of Random Walk Algorithm**
  The State University of Santa Cruz - UESC - Computer Week (2011).

Work Experience

Period	**May 2015 — Currently**
Employer	**Eldorado Institute of Technology** Campinas, Brazil
Position	**Software Engineer Jr**
Languages	**C#, C++, JavaScript**

- Maintained an effective and constant interaction with project's customers.
- Participated in projects under the Scrum methodology.
- Contributed to some of the most relevant projects in the field of image processing.
- Contributors of the internal Machine Learning research group.

Period	**May 2014 — November 2014**
Employer	**Great Lakes Forestry Centre** Sault Ste Marie, Canada
Position	**Researcher Junior**
Languages	**R, Linux Shell Script**

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- Led implementation of the R opentraj package for creating and analyzing air trajectory data which was the main computational tool for a research project on insects' transportation.
- Developed a library that encapsulates the core functionalities of the *Hybrid Single Particle Lagrangian Integrated Trajectory Model* (HYSPLIT) software in order to have total access of its results from within the R environment.

Period	**March 2012 — June 2013 (Part Time)**	
Employer	**RCS Informática**	Itabuna, Brazil
Position	**Software Developer**	
Languages	**Delphi, HTML5, CSS3, JavaScript, PHP, MySQL**	

- Developed and debugged software, such as Protocol System, Accounting System, and Daily Management System which led to a percent increase of 8% in revenue.
- Redesigned the Enterprise's website leading to a 20% reduction in customer supporting calls.
- Debugged existing software plug-ins for user management and report generation.

Period	**2010 — 2010 (Part Time)**	
Employer	**TecnoJr - junior enterprise**	UESC - Ilhéus, Brazil
Position	**Software Developer (Trainee)**	*Volunteer*

- Learned the basics regarding software development life circle ranging from the first contact with a client to the software architecture definition and implementation.

Participation In Events

1. **XVIII UESC Scientific Seminar, 2012.** *(Symposium)*
2. **High Performance Computing, 2011.** *(Workshop)*
3. **Bahia/Alagoas/Sergipe Computing Regional School, 2011 (XI ERBASE).** *(Congress)*
4. **Regional School of High Performance Computing (I ERAD), 2011** *(Congress)*
5. **Robots virtualization, 2011** *(Workshop)*
6. **X Computer Week at the State University of Santa Cruz, 2010** *(Congress)*
7. **High Performance Computing, 2010** *(Workshop)*
8. **IX Semana de Informática da UESC, 2009** *(Congress)*

Extracurricular Activities

- Udacity - 6 computer science courses ranging from High Performance Computing, to Deep Learning and Artificial Intelligence. (certificates available upon request)
- Coursera - University of California, Santa Cruz , C++ for C Programmers
- Achieve Languages - English Course (2010 — 2013)

Skills

Languages	**C; C++; C#, Java; R; HTML; PHP; Python; SQL; CUDA; OpenMP; MPI;**
Data Bases	**MySQL, PostgreSQL, Oracle Enterprise Edition;**
Technologies	**Jupyter Notebooks; SVN; Git; Visual Studio**
Certifications	**JavaScript;**
Operating Systems	**Linux; MAC OS; Windows;**
Frameworks and Libraries	**AngularJS, KnockoutJS, TensorFlow, Sklearn**

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Languages

- English and Portuguese

Projects

Name **Image Classification** March, 2017
Github https://github.com/thalles753/deep-learning/tree/master/image-classification

- Built Proof of Concept Jupyter notebook to address some of Core Deep learning concepts on Image classification using the CIFAR-10 dataset. The notebook covers most of the core Deep Learning concepts ranging from the very first preprocessing steps such as data visualization and normalization to some commonly used techniques that include: Convolutions, Activation Functions, Dropout, Pooling, Bias, and Fully connected layers. Also, we provide some insight on model tuning by playing with some learning parameters such as the learning rate and epoch size.

Name **Asynchronous Actor Critic (A3C) Tensorflow implementation** Jan 2017
Github https://github.com/thalles753/machine-learning/tree/master/projects/A3C

- My version of the acclaimed Asynchronous Actor Critic (A3C) Tensorflow implementation from Google's DeepMind using Tensorflow and Openai Gym.

Name **Deep Q Network - DQN** Dec 2016
Github https://github.com/thalles753/machine-learning/tree/master/projects/DQN

- My own implementation of Google's DeepMind Deep Q Network paper Playing Atari with Deep Reinforcement Learning - Using Tensorflow and Openai gym.

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References

- **Dr Jean-Noel Candau**, Scientist, Great Lakes Forestry Centre, Sault Ste Marie, Ontario, Canada. *Jean-Noel.Candau@NRCan-RNCan.gc.ca*
- **Dr Esbel Tomás V. Orellana**, Teacher, The State University of Santa Cruz, Ilhéus, Brazil. *valero.esbel@gmail.com*
- **Mydiã Falcão Freitas**, Software Engineer, RCS Informática, Itabuna, Brazil. *mydyfreitas@gmail.com*