

## PERSONAL INFORMATION

## Tiago Travassos Vieira Vinhoza

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💬 Skype tiago.vinhoza

Sex Male | Date of birth 14 Jun 1977 | Nationality Brazilian

## PREFERRED JOB

## Data Scientist, Machine Learning Engineer, Data Analyst

## WORK EXPERIENCE

Sep 2014–Present

## Research Fellow

INESC TEC, Porto (Portugal)

- Team member of the SIBILA (Towards Smart Interacting Blocks that Improve Learned Advice)
- Development of an algorithm to automatically refine Bayesian Networks designed by domain specialists by using structure and parameter learning.
- Built predictive models for breast cancer based on annotated mammography reports.

Dec 2008–May 2014

## Research Fellow

Instituto de Telecomunicações, Porto (Portugal)

- Team member of the DigiScope (Digitally Enhanced Stethoscope for Clinical Usage) project (June 2012 - May 2014)
  - Created a set of heart sound features that allowed the retrieval of medically relevant information such as location and intensity of the first and second heart sounds, location and duration of heart murmurs, and presence/absence of noise in an auscultation.
  - Built predictive models to assess their heart condition.
  - Techniques employed: cross-validation, clustering, classification algorithms and statistical signal processing.
- Team Member: Distributed Routing and Infotainment through Vehicular Inter-Networking project (Sep. 2009–June 2012)
  - Used mathematical modeling to propose a vehicle-to-vehicle (V2V) communications channel model that accounts for vehicles as 3D obstacles and assessing their impact on vehicular ad-hoc network performance metrics.
- Team Member: Network Coding for Robust Architectures in Volatile Environments project (Dec. 2008 – Dec. 2010)
  - Investigated the delay distribution of random linear network coding using a Markov chain models.
  - Devised a distributed storage scheme that relies on coding to provide a robust and low complexity solution achieving a prescribed level of confidentiality.

Jan 2008–Aug 2008

## Postdoctoral Researcher

Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro (Brazil)

- Channel Estimation and receiver design for OFDM and multicarrier CDMA systems

## EDUCATION AND TRAINING

- Sep 2003–Dec 2007 **Ph.D. in Electrical Engineering**  
Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro (Brazil)
- Mar 2001–Sep 2003 **M.Sc. in Electrical Engineering**  
Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro (Brazil)
- Mar 1995–Dec 1999 **Diploma in Electrical Engineering**  
Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro (Brazil)

## PERSONAL SKILLS

Mother tongue(s) Portuguese

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2
Certificate in Advanced English (CAE)					

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills

- Ability to adapt to multicultural environments.
- Team player.
- Hard working.
- Experience presenting research results in international conferences.
- Experience supervising M.Sc. students.

Organisational / managerial skills

- Organization of the Information Theory and Applications workshop at Instituto de Telecomunicações - Porto, June 2010.
- Organization of the IT-Porto group meetings (2009-2011).

Job-related skills

- Good command of probability theory, statistics, optimization techniques, calculus, linear algebra, adaptive algorithms, information theory tools acquired in my M.Sc and Ph.D. research.
- Knowledge of Machine Learning and Data Mining: Linear/Logistic Regression, SVM, Neural Networks, Decision Trees, Graphical Models, Ensemble Learning, Association Rules.
- Good problem solving and analytical skills.

Computer skills

- MATLAB/Simulink (Communications and Signal Processing toolboxes), R (good knowledge), WEKA (good knowledge), Python (good knowledge), MySQL (basic), HTML/CSS (basic), MapReduce (basic).

Driving licence

A1, B1, B

## ADDITIONAL INFORMATION

### Relevant Publications and Research Outcomes

- E. Almeida, P. Ferreira, T. T. V. Vinhoza, I. Dutra, Y. Wu, E. Burnside, "ExpertBayes: Automatically Refining Manually Built Bayesian Networks", 13th International Conference on Machine Learning and Applications (ICMLA'14), Detroit, MI, USA, 2014.
- J. Pedrosa, A. Castro, T. T. V. Vinhoza, "Heart Sound Segmentation and Murmur Detection in Pediatric Phonocardiograms", 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2014), Chicago, IL, USA, 2014.
- A. Castro, T. T. V. Vinhoza, S. S. Mattos, M. T. Coimbra, "Heart Sound Segmentation of Pediatric Auscultations Using Wavelet Analysis", 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2013), Osaka, Japan, 2013.
- P. Ferreira, T. T. V. Vinhoza, A. Castro, F. Mourato, T. Tavares, S. S. Mattos, I. Dutra, M. T. Coimbra, "Knowledge on Heart Condition of Children based on Demographic and Physiological Features", 26th International Symposium on Computer-Based Medical Systems (CBMS 2013), Porto, Portugal, 2013.
- P. F. Oliveira, L. Lima, T. T. V. Vinhoza, M. Medard, J. Barros "Coding for Trusted Storage in Untrusted Networks", IEEE Transactions on Information Forensics and Security, December 2012.
- M. Nistor, D. E. Lucani, T. T. V. Vinhoza, R. A. Costa and J. Barros, "On the Delay Distribution of Random Linear Network Coding", To appear in IEEE Journal on Selected Areas in Communications (Special issue on Trading Rate for Delay at Transport and Application Layers), Vol.29, No.5, pp. 1084-1093, May 2011.
- M. Boban, T. T. V. Vinhoza, M. Ferreira, J. Barros, O. K. Tonguz, "Impact of Vehicles as Obstacles in Vehicular Adhoc Networks", IEEE Journal on Selected Areas in Communications (Special issue on Vehicular Communications and Networks), Vol.29, No.1, pp. 15-28, January 2011.

### Professional Development - Massive Online Open Courses

- Machine Learning (Coursera), 2014.
- R Programming (Coursera), 2014.
- Getting and Cleaning Data (Coursera), 2014.
- Exploratory Data Analysis (Coursera), 2014.
- Reproducible Research (Coursera), 2014.
- Data Analysis and Statistical Inference (Coursera), 2014.
- Learning from Data (edX), 2014.

### Honours and awards

- "Ciência 2008" contract from the Portuguese Foundation for Science and Technology, 2009.
- Post-Doctoral Scholarship from the Portuguese Foundation for Science and Technology, 2009.
- CNPq scholarship for Doctoral studies, 2003.
- CAPES scholarship for Master studies, 2001.
- Academic Excellence Certificate, 1999.

### References

- Prof. Inês de Castro Dutra, FCUP / CRACS INESC TEC ines@dcc.fc.up.pt, Phone: +351 220402947
- Prof. João Barros, FEUP / Instituto de Telecomunicações jbarros@fe.up.pt, Phone: +351 225081825
- Prof. Miguel Coimbra, FCUP / Instituto de Telecomunicações mcoimbra@dcc.fc.up.pt, Phone: +351 220402934
- Prof. Raimundo Sampaio Neto, CETUC, PUC-Rio raimundo@cetuc.puc-rio.br, Phone: +55 21 3527-1699
- Prof. Rodrigo Caiado de Lamare, CETUC, PUC-Rio delamare@cetuc.puc-rio.br, Phone: +55 21 3527-1148