Telmo de Lucena Torres de Menezes

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email: telmo@telmomenezes.com
URL: http://telmomenezes.com
Born: May 27, 1976—Coimbra, Portugal
Nationality: Portuguese

Current Appointment

2010- Postdoc Researcher at the French National Center for Scientific Research (CNRS) / Centre d'Analyse et de Mathématique Sociales CAMS/EHESS / Institut des Systèmes Complexes – Paris Ile de France

Working in an inter-disciplinary environment with a focus on Machine Learning and Artificial Intelligence. I have created a methodology and an open source tool based of genetic programming to automatically discover plausible generative models for complex networks. This methodology led to the discovery of various plausible growth models, namely for simple brains, social networks and protein interaction networks.
I am currently working on a system aimed at generating knowledge hyper-graphs from natural language.

Education

2009 PhD in Computer Science, University of Coimbra (Highest Honors)

Thesis title: Evolutionary Computational Intelligence for Multi-Agent Simulations
Jury members:

- Ernesto Costa, PhD (Thesis advisor; Full Professor – University of Coimbra)
- Julian Miller, PhD (Lecturer – University of York)
- Luís Correia, PhD (Associate Professor – University of Lisbon)
- Rui Mendes, PhD (Assistant Professor – University of Minho)
- Francisco Pereira, PhD (Assistant Professor – Instituto Superior de Engenharia de Coimbra)
- Fernando Penousal Machado, PhD (Assistant Professor – University of Coimbra)

The thesis abstract and the full version pdf file can be found at http://telmomenezes.com/phd.

1999 BSc in Computer Science, University of Coimbra

During my internship at Critical Software, I developed a software module for NASA / Jet Propulsion Laboratory. This module was part of Xception, a fault injection tool used by NASA to test space probe computer systems – http://www.xception.org/products/case-study.

Areas of Specialization / Research Interests

Artificial Intelligence, Genetic Programming, Complex Systems, Multi-Agent Systems, Knowledge Graphs, Natural Language Processing, Computational Social Sciences.

Publications in Peer-Reviewed Journals and Conferences

2014 Menezes, T. and Roth, C., **Automatic Discovery of Plausible Network Models**, *Submitted to Nature Scientific Reports* [under review]

2013 Menezes, T. and Roth, C., **Automatic Discovery of Agent Based Models: an Application to Social Anthropology**, *Advances in Complex Systems*, **16**(7), October 2013

White, D., Oztan, T., Sinkovitz, R., Menezes, T., **Complex Social Science (CoSSci) Gateway: Autocorrelation Modeling, Kinship Network Modeling, k- and pairwise cohesion in Large Networks Open Opportunities for Online Education.**, *Sunbelt XXXIII*, Hamburg, Germany, May 2013

2012 Menezes, T. and Roth, C., **Artificial Social Scientist: an Application to Marriage Networks**, *in Proc. of the Interdisciplinary Workshop on Information and Decision in Social Networks (WIDS 2012)*, MIT, Cambrige, MA, USA, November 2012

Menezes, T., Roth, C. and Hamberger, K., **Finding Generators for Alliance Networks**, *in Proc. of ESSA 2012 - 8th Conference of the European Social Simulation Association*, University of Salzburg, Austria, September 2012

2011 Menezes, T., Roth, C. and Cointet, J-P., **Finding the Semantic-Level Precursors on a Blog Network**, *International Journal of Social Computing and Cyber-Physical Systems*

Menezes, T., **Evolutionary Modeling of a Blog Network**, *in Proc. of the IEEE 2011 Congress on Evolutionary Computation*, New Orleans, USA, June 2011

2010 Menezes, T. and Roth, C. and Cointet, J-P., **Precursors and Laggards: An Analysis of Semantic Temporal Relationships on a Blog Network**, *in Proc. of the 2010 IEEE International Conference on Social Computing, SocialCom10*, Minneapolis, USA, August 2010

2009 Menezes, T. and Costa, E., **Coevolution of Competing Agent Species in a Game-like Environment**, *in Proc. of the 1st European Workshop on Bio-inspired Algorithms in Games, EvoGAMES 2009*, Tübigen, Germany, April 2009

2008 Menezes, T. and Costa, E., **Artificial Brains as Networks of Computational Building Blocks**, *in Proc. of the 5th European Conference on Complex Systems*, Jerusalem, Israel, September 2008

Menezes, T. and Costa, E., **Modelling Evolvable Brains - An Heterogeneous Network Approach**, *International Journal of Information Technology and Intelligent Computing*, 2 : 2, January 2008

2007 Menezes, T. and Costa, E., **Designing for Surprise**, *in Proc. of the 9th European Con-*

ference on Artificial Life, ECAL 2007, Lisbon, September 2007

Menezes, T. and Costa, E., **The Gridbrain: an Heterogeneous Network for Open Evolution in 3D Environments**, *in Proc. of the The First IEEE Symposium on Artificial Life*, The First IEEE Symposium on Artificial Life, Honolulu, USA, April 2007

2006 Menezes, T. and Costa, E., **A First Order Language to Coevolve Agents in Complex Social Simulations**, *in Proc. of the European Conference on Complex Systems 2006*, Oxford, United Kingdom, September 2006

Baptista, T. and Menezes, T. and Costa, E., **BitBang: A Model and Framework for Complexity Research**, *in Proc. of the European Conference on Complex Systems 2006*, Oxford, United Kingdom, September 2006

Menezes, T. and Baptista, T. and Costa, E., **Towards the Generation of Complex Game Worlds**, *in Proc. of the IEEE Symposium on Computational Intelligence and Games (CIG'06)*, Reno/Lake Tahoe, USA, May 2006

1999 Menezes, T. and Costa, D. and Tavares, M., **On the Extension of Xception to Support Software Fault Models**, *in Proc. of the International Symposium on Software Reliability Engineering (ISSRE2000)*, San Jose, USA, October, 2000.

Menezes, T. and Carreira, J., **Experiment Management for the Xception Fault Injection Technology**, *in Proc. of the International Symposium on Software Reliability Engineering (ISSRE'99)*, Boca Raton, USA, November 1999.

1998 Pedroso, H. and Silva, L. M. and Batista, V. and Martins, P. and Soares, G. and Menezes, T., **Parallel Computing over the Internet with Java**, *in Proc. of the 3rd International Meeting on Vector and Parallel Processing (VECPAR'98)*, Oporto, Portugal, June 1998

Presentations

2014 Menezes, T. and Roth, C., **Automatic discovery of plausible network models**, Deutsche Physikalische Gesellschaft (DPG) Spring Meeting, Dresden, Germany, April 2014

2013 Menezes, T., **Discovering plausible network generators**, *Mathematics for Industry and Society*, French Embassy Berlin, Germany, July 2013

2012 Menezes, T., **Agent Based Modelling of Genealogical Networks**, *Colloque Final du Projet SimPa - Simulations de la Parenté*, Paris, France, Oct 18-20, 2012

Menezes, T., **Machine Learning Applied to Alliance Networks**, *Colloque Final du Projet SimPa - Simulations de la Parenté*, Paris, France, Oct 18-20, 2012

2011 Menezes, T., **Evolving social graph models**, *ASSYST workshop "Hypernetworks, network dynamics, influence on networks: current tendency in social research"*, Warsaw, Poland, Dec 14-15, 2011

Menezes, T., **Evolutionary modeling of complex networks**, *Complex Networks Semi-*

nars at LIP6, Paris 6 University, France, Nov 17, 2011

Posters

2014 Roth, C., Lerique, S., Mansour, L. and Menezes, T., **Algopol - Politics of Algorithms**, *Workshop "Digital Humanities in Berlin"*, Freie Universität Berlin, Feb 2014

2011 Menezes, T., **A process for mapping large directed networks to 2D images and its applications**, *European Conference on Complex Systems 2011*, University of Vienna, Austria, 2011

Previous Research Appointments

2004-2009 Researcher at the Evolutionary and Complex Systems Group of the University of Coimbra, Portugal

- Evolutionary Computational Intelligence for Multi-Agent Simulations (PhD work)
- MATER - Territorial Self-Organization Models (Collaborator)

1998 Research Intern at the University of Coimbra, Portugal

- Parallel Scientific Computation with Java

Teaching

2014 Teaching some of the classes of the *Digital Cultures* course for grad students at Humboldt University, Berlin
L'analyse de réseaux : logiciels et méthodes, Centre Marc Bloch, Berlin
2007-2009 BSc/MSc projects supervisor at the University of Coimbra
2008 Master in Game Development, Artificial Intelligence at the Universidade Independente de Lisboa
2000-2001 Teaching assistant at the University of Coimbra

Industry Experience

2009 R&D Engineer, Taptu (Cambridge, UK based search engine for the mobile web)
2001-2003 Software Engineer (Artificial Intelligence), Ciberbit
1999-2001 Software Engineer, Critical Software (working on a project for NASA/JPL)

Research Collaborations

2011 Consultant for the "IPinions Rank" project at Médialab, SciencesPo, Paris, France

Awards

2011 Winner of the data challenge competition of the *Mining the Digital Traces of Science - MDTS11* workshop, Paris, France

1991 Winner of the national math olympics for high school students, Portugal

Service

2014 Reviewer for the journal *PLOS ONE*

Reviewer for the journal *IEEE Transactions on Knowledge and Data Engineering*

2013 Reviewer for the *2013 IEEE Symposium Series on Computational Intelligence*, 16-19 Apr, Singapore

Reviewer for *ALEA'13 - Artificial Life and Evolutionary Algorithms*, 9-12 Sep, Angra do Heroísmo, Portugal

2012- Reviewer for the journal *Advances in Complex Systems*

2012 Member of the program committee of *IEEE 2012 Congress on Evolutionary Computation*, 10/15 Jun, Brisbane, Australia

2011 Member of the program committee of *DevLeaNN - Workshop on Development and Learning in Artificial Neural Networks*, 27/28 Oct, Paris, France

Member of the program committee of *ALEA@EPIA2011, the 5th Workshop on Artificial Life and Evolutionary Algorithms, Portugal*

Chair of the Clustering and Data Mining panel at the *IEEE 2011 Congress on Evolutionary Computation*

2010 Reviewer for *MAEB 2010 - VII Spanish Congress on Meta-heuristics and Evolutionary and Bio-inspired Algorithms*

2009 Member of the technical program committee and reviewer for *Complex'09 - The First International Conference of Complex Sciences: Theory and Applications*

Open Source Scientific Tools

Synthetic (https://github.com/telmomenezes/synthetic): Genesis and dynamics of Complex Networks.
LabLOVE (http://telmomenezes.com/lablove): Artifical Life research tool.

Technical Skills

- Generic Programming Languages: C/C++, Java, Clojure, Scala, Python, Objective-C, JavaScript
- Scientific Programming Languages / Libraries: R, NumPy/SciPy
- Others: HTML/CSS, SQL and Relational Databases, NoSQL Databases (Riak, MongoDB), Mobile Application Development, Web Development, Distributed Systems

Languages

- **English**: proficient (with proficiency in English certificate from Cambridge Univeristy)
- **Portuguese**: native

· **French**: high comprehension, medium conversational skills
· **German**: very basic skills (A1)