

Maria Kalimeri, PhD

Data Scientist, Researcher, Biophysicist

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Personal Info: Born on May 11, 1983 in Athens, Greece

Links: [Personal webpage](#), [Researchgate](#), [LinkedIn](#), [Github](#)



Work experience

- Mar 2017- Senior data scientist at [Nightingale Health Ltd.](#); Risk prediction and data mining in metabolomics and computational medicine.
- 2014-2017 Post-doctoral researcher in [Ilpo Vattulainen's group](#); Research focus on understanding the lipid regulation of actin-binding proteins via computer simulations; other responsibilities included master theses supervision, occasional lecturing and teaching assistance
[Tampere University of Technology, Department of Physics \(nowadays Tampere University\)](#), Tampere, Finland
- 2011-2014 Doctoral researcher in [Fabio Sterpone's group](#); Research focus on examining the correlation between protein mechanical flexibility and thermal stability ([see here thesis manuscript](#))
[Laboratoire de Biochimie Théorique, IBPC, CNRS](#), Paris, France
- 2010-2014 Research assistance in quantitative linguistics group coordinated by [Dr. Vassilios Constantoudis](#) and [Dr. Harris Papageorgiou](#); Research focus on extracting universal language- and genre- characteristics from written texts
National Technical University of Athens, School of Applied Mathematical and Physical Science, Athens, Greece
- 2007-2010 Research assistance in Prof. Konstantinos Eftaxias' group; Research focus on characterization of pre-seismic signals and signals from other catastrophic phenomena
[National and Kapodistrian University of Athens](#), Department of Physics, Section of Solid State Physics, Athens, Greece

Education

- Ph.D. in computational biophysics (2014)
[Université Paris Diderot, Laboratoire de Biochimie Théorique, IBPC, CNRS](#), Paris
Thesis link: "[Are thermophilic proteins rigid or flexible? An in silico investigation](#)"
Supervisor: [Dr. Fabio Sterpone](#)
- M.Sc. in [Mathematical Modelling in Modern Technologies and Financial Engineering](#), (2011)
School of Applied Mathematical and Physical Science,
National Technical University of Athens
Graduation grade: 8.39/10
Thesis title: "[Entropic Analysis of Natural Language](#)"
Supervisors: [Dr. Vassilios Constantoudis](#) and [Dr. Harris Papageorgiou](#)
- [Bioinformatics Specialization](#) by University of California, San Diego on Coursera, (2017)

- B.Sc. in Physics, **National and Kapodistrian University of Athens (2009)**
Major: Solid State Physics
Graduation grade: 7.78/10
Thesis title: “*A unified approach of complex catastrophic phenomena*”
Supervisor: **Prof. Konstantinos Eftaxias**

Specialized courses are listed [here](#)

Computer and data analysis skills

- OS: Linux, Mac OS, Windows
- Programming languages: R, Python, Matlab, Java, Ruby, SML, C, can read C++, Fortran, Pascal.
- Data analysis: Machine learning pipelines, data visualization and communication (shiny, R markdown, flexdashboard, e.t.c.), SQL.
- Scripting: Bash, Tcl, Perl
- Markup: \LaTeX , HTML, YAML
- Molecular simulation and network visualization software: NAMD, Gromacs, Visual Molecular Dynamics (VMD), Gephi (Open Graph Viz Platform), ...

Teaching experience

- 2016 Statistical Physics, Master level, teaching assistant
Tampere Univ. of Technology, Department of Physics, Finland (*one spring period*)
- 2011 Design and development of computer applications (in Java), first year undergraduate level, teaching assistant
School of Applied Mathematical and Physical Science, Nat. Tech. Univ. of Athens (*one spring semester*)
- 2009-2011 Electromagnetism lab, second year undergraduate, teaching assistant
Faculty of Physics, Univ. of Athens (*two fall semesters*)
- 2009-2011 Waves and Optics lab, second year undergraduate, teaching assistant
Faculty of Physics, Univ. of Athens (*two spring semesters*)
- 2009-2011 Tutoring high-school students in Physics and Mathematics, self-employed in Athens, Greece

Languages

Greek (native), English (full professional proficiency), Finnish (limited working proficiency), French (limited working proficiency)

Selected publications (peer reviewed)

A full list of publications can be found [here](#)

- “**Circulating metabolites and the risk of type 2 diabetes: a prospective study of 11,896 young adults from four Finnish cohorts**”, Ahola-Olli, A.V., Mustelin, L., **Kalimeri, M.**, (...), Raitakari, O., Würtz, P., *Diabetologia* (2019)
- “**Mechanistic principles underlying regulation of the actin cytoskeleton by phosphoinositides**”, Y. Senju, **M. Kalimeri**, E. V. Koskela, P. Somerharju, H. Zhao, I. Vattulainen, and P. Lappalainen, *Proc. Natl. Acad. Sci. U.S.A.* (2017)
- “**Word-length entropies and correlations of natural language written texts**”, **M. Kalimeri**, V. Constantoudis, C. Papadimitriou, K. Karamanos, F. K. Diakonos and H. Papageorgiou, *J Quant Linguist.*, 22, 101-118 (2015)
- “**Interface matters: The stiffness route to stability of a thermophilic tetrameric malate dehydrogenase**”, **M. Kalimeri**, E. Girard, D. Madern and F. Sterpone, *PLoS One*, 9, 12 (2014)

- “The OPEP coarse-grained protein model: from single molecules, amyloid formation, role of macromolecular crowding and hydrodynamics to RNA/DNA complexes”, F. Sterpone, S. Melchionna, P. Tuffery, S. Pasquali, N. Mousseau, T. Cragolini, Y. Chebaro, J.F. St-Pierre, **M. Kalimeri**, A. Barducci, Y. Laurin, A. Tek, M. Baaden, P. H. Nguyen and P. Derreumaux, *Chem. Soc. Rev.*, 43, 4871-4893 (2014)
- “How Conformational Flexibility Stabilizes the Hyperthermophilic Elongation Factor G-domain”, **M. Kalimeri**, O. Rahaman, S. Melchionna and F. Sterpone, *J. Phys. Chem. B*, 117 (44), 13775-13785 (2013)
- “Entropy analysis of word-length series of natural language texts: Effects of text language and genre”, **M. Kalimeri**, V. Constantoudis, C. Papadimitriou, K. Karamanos, F. K. Diakonou and H. Papageorgiou, *International Journal of Bifurcation and Chaos*, 22, 1250223 (2012)
- “Investigating dynamical complexity in the magnetosphere using various entropy measures”, G. Balasis, I. A. Daglis, C. Papadimitriou, **M. Kalimeri**, A. Anastasiadis, and K. Eftaxias, *J. Geophys. Res.*, 114, A00D06, (2009)
- “Dynamical complexity detection in pre-seismic emissions using nonadditive Tsallis entropy”, **M. Kalimeri**, C. Papadimitriou, G. Balasis and K. Eftaxias, *Phys. A*, 387 (5-6), pp. 1161-1172 (2008)

Talks

A list of conference posters can be found [here](#)

1. “In search for the membrane sculpting mechanism of IRSp53”
Prolipids Centre of Excellence meeting, Turku, Finland, **04/02/2016**
2. “Simulating biomolecular systems”
Invited lecture at “physics seminars” course, Tampere University of Technology, Finland, **29/10/2015**
3. “Make it stable or make it functional!”
Journé du GT-GDR Archaea, Institut Pasteur, Paris, France, **19/05/2014**
4. “Protein Flexibility and Stability: Thermophiles Know Best”
Biological Physics and Soft Matter (BIO) Group, Tampere University of Technology, Finland, **2/12/2013**
5. “On the road to understanding protein thermostability: All-atom simulations of two homologous hyperthermophilic and mesophilic species”
Journées Modélisation, Chimie Tech, Paris, France, **29-31/05/2013**

Editorial and referee activities (peer reviewed journals and conferences)

- Reviewer: *Physica A: Statistical Mechanics and its Applications*, *Entropy*, *Natural Hazards and Earth Systems Sciences (NHES)*, *Digital Scholarship in Humanities (DSH)*
- Member of Reviewer and Advisory Board: *International Workshop on Theoretical and Applied Physics*, May 28-29, 2016 Istanbul

Last updated: June 17, 2020