

Biographical Sketch: Abel J. P. Gomes

Dr. Gomes is Associate Professor in Computer Graphics (<https://www.it.ubi.pt/medialab>), Vice-Coordinator of the Delegation of Instituto de Telecomunicações in Covilhã, and ex-Chair of the Department of Computer Science and Engineering at the University of Beira Interior, Covilhã, Portugal (<http://www.di.ubi.pt/~agomes>).

Research Areas

Dr. Gomes' research areas of interest include Geometric Modeling, Computational Geometry, Computer Graphics, Visualization, Computational Biology, Molecular Graphics, and Bioinformatics. He is developing advanced methods in geometric computing and molecular graphics, including super-fast convex hull algorithms, implicit curves and surfaces, real-time ray tracing without acceleration data structures, graph search algorithms, triangulation of molecular surfaces, and protein pocket detection methods. He has been involved in several student research training grants in Portugal and abroad.

Education

B.Eng. (5 years) in Electrical Engineering, University of Coimbra, Portugal 1987; M.Sc. in Computer Graphics, University of Coimbra, Portugal 1992; Ph.D. in Computer Science, Brunel University, UK 2000, Habilitation in Computer Science and Engineering, Instituto Superior Técnico, University of Lisbon, PT 2013.

Professional Experience

Assistant Professor of Computer Science, University of Beira Interior, 2000-06; Associate Professor of Computer Science, University of Beira Interior, 2006-; Coordinator of the Delegation of Instituto de Telecomunicações, University of Beira Interior, 2004-14; Head of the Department of Computer Science and Engineering, University of Beira Interior, 2002-04 and 2009-13.

Recent Selected Honors and Awards

Member of the Portuguese Science and Technology Foundation (FCT) Evaluation Committee, 2014-; Member of Scientific Board of the Science and Technology Park (ParkUrbis), Covilhã, Portugal, 2002-2010; Member of Scientific Board of the Applied Research Laboratory in Visual and Interactive Technologies (LIATVI), Tomar, Portugal, 2014-; President of the Eurographics Portuguese Chapter, 2013-2016; Member of the Executive Committee of Eurographics Association, 2013-2016; General Co-Chair, Eurographics Conference, Lisbon, Portugal, 2016; Member of the Portuguese Institute of Engineers (OE), 1991-; Member of the Institute of Electrical and Electronic Engineers (IEEE) 2006-; Member of the Association for Computing Machinery (ACM), 2006-; Program Co-Chair, Shape Modeling International Conference, Lisbon, Portugal, 2018;

Three Recent Significant Publications

1. Rui P. Duarte and Abel Gomes (2015). "Real-time simulation of cumulus clouds through SkewT/LogP diagrams", *Computer & Graphics*, 67(2017), pp. 103-114.
2. Sérgio Dias, Quoc Nguyen, Joaquim Jorge, and Abel Gomes (2017). Multi-GPU-based detection of protein cavities using critical points. *Future Generation Computer Systems*, Vol. 6, pp. 430-440.
3. Abel Gomes (2016). "A Total Order Heuristic-Based Convex Hull Algorithm for Points in the Plane. *Computer Aided Design*, Vol.70, pp.153-160, January.

Other Significant Publications

4. Sérgio Dias and Abel Gomes (2015). "Triangulating molecular surfaces over a LAN of GPU-enabled computers", *Parallel Computing*, 42(2015), pp.35-47.
5. Adriano Raposo and Abel Gomes (2012). "3D molecular assembling of B-DNA sequences using nucleotides as building blocks". *Graphical Models* 74(4), pp. 244-254.

6. Abel Gomes, José Morgado and Edgar Pereira (2009). “A BSP-Based Algorithm for Dimensionally Non-Homogeneous Planar Implicit Curves with Topological Guarantees”, *ACM Transactions on Graphics*, 28(2).
7. Abel Gomes, Irina Voiculescu, Joaquim Jorge, Brian Wyvill, and Callum Galbraith (2009). *Implicit Curves and Surfaces: Mathematics, Data Structures, and Algorithms*, Springer-Verlag, London, 2009.

Synergistic Activities

Guest Editor: IEEE Transactions on Emerging Topics in Computing, Special issue on Massively Multiplayer, 2015; IEEE Vehicular Technology Magazine, Highlights on the Workshop 20 Years of Instituto de Telecomunicações (Tenth Anniversary of IT-Covilhã), 2012.

Co-Chair/Session Chair: Shape Modeling International Conference (SMI'18), Lisbon, Portugal, 2018; Eurographics Conference, Lisbon, Portugal, 2016; CAD Graphics, Hong-Kong, 2013.

Collaborations and Other Affiliations

Thesis Advisor, & Collaborators: Alan Middleditch (Brunel University, London—Ph.D. Advisor), Chris Reade (Kingston University, Kingston upon Thames, UK), Bianca Falcidieno (CNRS, Genova, Italy), Irina Voiculescu (Oxford University, UK), Brian Wyvill (Bath University, UK), Joaquim Jorge (University of Lisbon, Portugal), Chandrajit Bajaj (The University of Texas at Austin, USA).

Graduate Advisees: Paulo Moura (2003), José Morgado (2005), Frutuoso Silva (2006), João Muranho (2012), Quyen Trong Nguyen (2014), Adriano Raposo (2015), Sérgio Dias (2015), Rui Sérgio Rodrigues (2016), Rui Pedro Duarte (2016), Dagmawi Lemma (2015).

Postdoctoral Advisees: André Neves (2014), Sérgio Dias (2016, 2017, 2018), Ana Mafalda Martins (2017/18).