

# Antonio Mucherino's Curriculum Vitæ

## Personal

ANTONIO MUCHERINO (born in 1978)

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## Job history and experiences

Current position (since Sep 2011):

- **Associate Professor**<sup>1</sup> at IRISA, University of Rennes 1, Rennes, France.

Previous positions:

- **Postdoc Researcher**, from Sep 2006 to Aug 2011, in inverse chronological order

<i>time</i>	<i>where</i>	<i>advisor(s)</i>
9 months	CERFACS, Toulouse	Serge Gratton, Iain Duff
1 year	INRIA Lille	El-Ghazali Talbi
1.5 years	LIX, École Polytechnique, Palaiseau	Carlile Lavor, Leo Liberti
9 months	IFAS, University of Florida	Petraq Papajorgji
6 months	CAO, University of Florida	Panos Pardalos

- **Junior Researcher** (during PhD), from Nov 2001 to Dec 2005

<i>time</i>	<i>where</i>	<i>advisor</i>
10 months	ISA-CNR, Avellino	Angelo Facchiano
10 months	Giovanni Pascale Foundation, Naples	Giovanni Colonna

- **Trainee** (before PhD)

<i>time</i>	<i>where</i>	<i>advisor</i>
3 months	ICAR-CNR, Naples	Marco D'Apuzzo

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<sup>1</sup>Equivalent in France to *Maître de Conférences* with *Habilitation à Diriger des Recherches* (HDR).

## Education

- *July 2018*  
**Habilitation à Diriger des Recherches (HDR)**,  
University of Rennes 1, France.  
HDR Monograph title: *On the Discretization of Distance Geometry: Theory, Algorithms and Applications*.  
Awarded on: July 17<sup>th</sup>, 2018. President of the committee: Kadi Bouatouch.
- *Since 2009*  
On the **Qualification Lists** for “Maître de Conférences”,  
French National University Council (CNU), Section: 27 (computer science).
- *Nov 2001 - Dec 2005*  
**PhD in Computational Biology**,  
Department of Mathematics, Second University of Naples, Italy.  
Thesis title: *Geometric Aspects in the Simulation of Protein Folding Processes*.  
Awarded on: December 13<sup>th</sup>, 2005. Supervisor: Marco D’Apuzzo.
- *Sep 1997 - Oct 2001*  
**Master in Mathematical Sciences**,  
Department of Mathematics, Second University of Naples, Italy.  
Thesis title: *Quadratic Optimization: Algorithms and Software for Dense Problems*.  
Awarded on: October 30<sup>th</sup>, 2001. Supervisor: Marco D’Apuzzo.

## Research interests

- Distance Geometry
- Data Mining
- Meta-Heuristics
- Bioinformatics
- Parallel Computing

Details about my research activities can be found on my webpage: <https://www.antoniomucherino.it/en/research.php>

## Teaching

Only information about the classes I am currently teaching are reported below.

More details about all courses I have given, as well as some didactic material, can be found at the address:  
<http://www.antoniomucherino.it/en/teaching.html>

1. **Multithreading Operating Systems** (in English).  
eit Digital Master School, Master in Informatics, University of Rennes 1.  
Academic year 2021/22, first semester, level M1 (M.Sc).
2. **Operating Systems and Networks** (in French, “Systèmes d’exploitation et réseaux”).  
MEEF Master, University of Rennes 1.  
Academic year 2021/22, second semester, level M1 (M.Sc).

3. **Parallel Computing** (in French, “Calcul parallèle”).  
 eit Digital Master School, Master in Informatics, University of Rennes 1.  
 Academic year 2021/22, second semester, level M1 (M.Sc).
4. **An Introduction to Object Oriented Programming** (in French, “Programmation à objets”).  
 Bachelor of Science in Informatics, University of Rennes 1.  
 Academic year 2021/22, first semester, level L2 (B.Sc).

In March 2018, I gave a lecture on *distance geometry and applications* to a group of Master students of the Department of Mathematics of UFSC (Florianópolis, Santa Catarina, Brazil).

Previous courses were given at University of Rennes 1 (since academic year 2011-12), at the École Polytechnique in Palaiseau (France) and at the Second University of Naples (Italy).

## Projects

### Awarded Grants

1. *Multi-Scale and Multi-Resolution Bio-Molecular Structure Determination by Geometric Approaches*, ANR’s PRCI in collaboration with Taiwan, with 3 partners in France and 2 partners in Taiwan. Source: ANR and MoST, 546.8 kEUR, 2020–2023 (4 years, extended of 6 months because of the covid-19 pandemic).
2. *Rapid NMR Protein Structure Determination and Conformational Transition Sampling by a Novel Geometrical Approach*. International cooperation between IRISA and Academia Sinica (Taipei, Taiwan). Source: CNRS-MoST, 5kEUR per year, 2018–19.
3. *The Special Role of Topology in the Analysis and the Simulation of Human Behaviors*. Temporary part-time job as an INRIA researcher (délégation INRIA). Source: INRIA Rennes, 8kEUR per year, 2016–2017.
4. *On the Generalization of the Distance Geometry and its Applications*. Interdisciplinary research. Source: INS2I/CNRS, 7kEUR, 2016.
5. *Distance Geometry and Applications*. International cooperation between University of Rennes 1 and Brazilian partners. Source: University of Rennes 1, 2kEUR per year. Awarded every year from 2012 to 2016.
6. *Distance Geometry and Answer Set Programming*. 1-year postdoc at University of Rennes 1. Source: Brittany Region, 33kEUR (75% of total cost), 2013.
7. *Discretizable Molecular Distance Geometry Problem and Protein Docking Problem*. 2-month visit (*chaire*) to UNICAMP (São Paulo, Brazil) for myself. Source: UNICAMP and French Embassy in São Paulo, travel and stay, 2012.
8. *Wine Fermentation Analysis by Biclustering*. International cooperation between IRISA and the Universidad Técnica Federico Santa María, Valparaíso, Chile. Source: CNRS-CONICYT, 4kEUR, 2012.
9. *A Discrete Approach to the Molecular Docking Problem*. 1-month visit to University of Rennes 1 for C. Lavor. Source: ISTIC, University of Rennes 1, 3kEUR, 2012.

### Participation

10. *Discretizable Distance Geometry Problem: Applications to Proteins & Motion Adaptation*, CAPES-PRINT project 88887.578009/2020-00. Source: CAPES agency in Brazil, 13790 Reais, 2019–21.

11. *Modelling Human Motion for Synthesis and Recognition with Deep Learning on Surface Features*. Royal Society International Exchanges. Source: UK's Royal Society, 12kGBP, 2019-20 (extended until November 2021 because of the covid-19 pandemic).
12. *An Interval Branch-and-Prune Approach for Obtaining Intrinsically Disordered Protein Conformations*, "Infinity" interdisciplinary projects, CNRS, 2018-19.
13. *Geometria de distâncias aplicada ao Cálculo de Estruturas 3D de Proteínas*, UNIVERSAL CNPq project, 2014.
14. *Bayesian inference paradigm: Biology in processors (Bip:Bip)*, ANR project, 2012–2017.
15. *Combinatorial Methods to Calculate Protein Structures by Using NMR Data*, State of São Paulo Research Foundation - FAPESP, 2009–2011.
16. *Innovative Problems and Methods in Nonlinear Optimization*, PRIN Project, Italian Ministry of University and Research (MIUR), 2005–2007.
17. *Computational Procedures for Simulating Protein Folding Processes*, Italian Region *Campania* (L.R. n.5 28/3/2002), 2005–2006.

## Organization activities

### Organization of Scientific Events

- chair of
  - Distance Geometry Day (DGD16), at IRISA/INRIA Rennes, on December 7, 2016.  
<http://www.antoniomucherino.it/events/DGD16/>  
 Invitation-based scientific program.
- co-chair of
  - Mini-symposium on Sensor Network Localization and Dynamical Distance Geometry, at Fields Institute, Toronto (Canada), on May 17-19, 2021:  
<http://www.fields.utoronto.ca/activities/20-21/constraint-sensor>  
 Co-chairing with H. Wolkowicz.
  - DIMACS Workshop on Optimization in Distance Geometry, at DIMACS Center, Rutgers University (USA), on June 26–28, 2019:  
<http://dimacs.rutgers.edu/events/details?eID=322>  
 Co-chairing with N. Krislock and C. Lavor.
  - Workshop on Computational Optimization (WCO\*), in the framework of the Federated Conference on Computer Science and Information Systems (FedCSIS):  
<https://fedcsis.org/wco>  
 Co-chairing with D. Zaharie and S. Fidanova since 2012 edition. Workshop held every year.

- international advisory committee member for
  - Geometric Science of Information (GSI21), Paris, France. July 2021.
  - Geometric Science of Information (GSI19), Toulouse, France. August 2019.
  - International Conference on Algebra, Number Theory and Discrete Geometry (dedicated to the 80<sup>th</sup> anniversary of M. Deza birth), TSPU of Leo Tolstoy, Tula, Russia, May 2019.
  - International Conference on BioInformatics and BioEngineering (BIBE18), Taichung, Taiwan, October 2018.
  - Geometric Science of Information (GSI17), Paris, France, November 2017.
  - Many Faces of Distances (MFD14), Campinas, São Paulo, Brazil, October 2014.
  - Distance Geometry and Applications (DGA13), Manaus, Amazonas, Brazil, June 2013.
  - Data Mining in Agriculture (DMA\*), editions 2011, 2012 and 2013, in the framework of the “Industrial Conference on Data Mining” (ICDM\*).
- session organizer in
  - GSI17, Paris, France, November 7–9, 2017 (with D. Gonçalves).
  - IFORS14, Barcelona, Spain, July 13–18, 2014 (with N. Maculan).
  - ICCOPT13, Lisbon, Portugal, July 27 – August 1, 2013 (with C. Lavor).
  - ISMP12, Berlin, Germany, August 19–24, 2012 (with N. Maculan).
- local organizing committee member for
  - TOGO10, Toulouse, France, August 31 – September 3, 2010.
  - CTW09, Paris, France, June 2–4, 2009.
- local events
  - MimeTIC’s Classification Days (CDs), four editions between 2016 and 2017.

<http://www.antoniomucherino.it/events/CDs/>

## Reviewing tasks

- refereed papers for:
  - SIMAX (SIAM);
  - JOGO, OPTL, JOTA, JOCO, COAP, MATR A and B, ORIJ, ANOR, NCAA, PLSO, IJEPES, AACA, SpringerPlus (Springer);
  - DAM, INS, CAM, CAMWA, PRLetters, COMPAG, JBIOTEC, CBAC, SOCO, CACE, INDAG, GVC, PAAA, JPDC (Elsevier);
  - GOMS (Taylor & Francis);
  - ITOR, MMA (Wiley);
  - TPDS, NET (IEEE);
  - TOMM (ACM);
  - OJMO (*open journal*);
  - IJNS (World Scientific);

- IJMHEUR (Inderscience);
  - OJDM (Scientific Research, an Academic Publisher);
  - Biology, Symmetry, Sensors, Applied Sciences (MDPI);
  - Fundamenta Informaticae, Integrated Computer-Aided Engineering (IOS Press).
- reviewer for Springer books;
  - reviewer of projects for the European Research Council (ERC);
  - reviewer of projects for INRIA team international partnerships.

## International Relationships

- Responsible person for the International Relationships at ISTIC, University of Rennes 1.  
Since January 2014, I'm member of the *Commission Affaires Internationales* (CAI) at University of Rennes 1.  
The following international agreements were recently signed or renewed:
  - University of Laval, Québec, Canada (renewal for other 5 years of our student exchange protocol).

## Conferences and Workshops with contribution

Only conference and workshop acronyms and a few more details are provided in the following list.  
More information can be found at: <http://www.antoniomucherino.it/en/conferences.html>

- EOSBF22, São Paulo (SP), Brazil. April 10–14, 2022.
- CSBW21, BIBM21, online event, December 9–12, 2021.
- WCO21, FedCSIS21, online event, September 2–5, 2021.
- LSSC21, Sozopol, Bulgaria (partially held online). June 7–11, 2021.
- BPS21, online. February 22–26, 2021.
- WCO20, FedCSIS20, online event. September 6–9, 2020.
- MIG19, Newcastle, UK. October 28–30, 2019.
- WCO19, FedCSIS19, Leipzig, Germany. September 1–4, 2019.
- 80<sup>th</sup> birthday of Michel Deza, Tula, Russia, May 13–18, 2019.
- IWBBIO19, Granada, Spain. May 8–10, 2019.
- MIG18, Cyprus, Greece. November 8–10, 2018.
- WCO18, FedCSIS18, Poznan, Poland. September 9–12, 2018.
- NMR\_Theory\_and\_Methods, Campinas, São Paulo, Brazil. May 21–22, 2018. **[invited speaker]**
- GOR-DG17, Bad Honnef, Germany. November 23–24, 2018. **[invited speaker]**
- MIG17, Barcelona, Spain. November 8–10, 2017.
- GSI17, Paris, France. November 7–9, 2017.
- IGRV17, Rennes, France. October 23–27, 2017.
- WCO17, FedCSIS17, Prague, Czech Republic, September 3–6, 2017.

- ROADEF17, Metz, France. February 22–24, 2017.
- WCO16, FedCSIS16, Gdansk, Poland. September 11–14, 2016.
- AIMS16, Varna, Bulgaria. September 7–9, 2016.
- WCO15, FedCSIS15, Lodz, Poland. September 13–16, 2015.
- LSSC15, Sozopol, Bulgaria. June 8–12, 2015.
- IWBBIO15, Granada, Spain. April 15–17, 2015.
- ROADEF15, Marseille, France. February 25–27, 2015.
- MFD14, Campinas, São Paulo, Brazil. October 22–24, 2014 (*two contributions*).
- WCO14, FedCSIS14, Warsaw, Poland. September 7–10, 2014.
- IFORS14, Barcelona, Spain. July 13–18, 2014.
- Uncertainties14, Rouen, France. June 23–27, 2014.
- INFORMS13, Minneapolis, USA. October 6–9, 2013 (*two contributions*).
- WCO13, FedCSIS13, Krakov, Poland. September 8–11, 2013.
- GSI13, Paris, France. August 28–30, 2013.
- ICCOPT13, Lisbon, Portugal. June 27 – August 1, 2013.
- DGA13, Manaus, Amazonas, Brazil. June 24–27, 2013. [**invited speaker**]
- IWBBIO13, Granada, Spain. March 18–20, 2013.
- Computational Biomedicine, Gainesville, Florida, USA. January 24–26, 2013.
- Ottawa Symposium on Biochemistry & Biophysics, Ottawa, USA. October 24–25, 2012.
- INFORMS12, Phoenix, USA. October 14–17, 2012.
- CLAIO12, Rio de Janeiro, Brazil, September 24–28, 2012.
- WCO12, FedCSIS12, Wroclaw, Poland, September 9–12, 2012.
- ISMP12, Berlin, Germany, August 19–24, 2012 (*two contributions*).
- ICMRBS12, Lyon, France, August 19–24, 2012.
- 2012 SIAM Annual Meeting, Minneapolis, Minnesota, USA, July 9–13, 2012.
- MDA12, Varna, Bulgaria, July 2–5, 2012.
- GOW12, Natal, Brazil, June 26–29, 2012.
- PCO12, IPDPS12, Shanghai, China, May 21–25, 2012.
- ROADEF12, Angers, France, April 11–13, 2012.
- br.BIO.fr 2012, Paris, France, March 21, 2012.
- CSBW11, BIBM11, Atlanta, GA, USA, November 12–15, 2011.
- WCO11, FedCSIS11, Szczecin, Poland, September 18–21, 2011.
- MAS11, Rome, Italy, September 12–14, 2011.
- DMA11, ICDM11, New York City, USA, September 2, 2011.
- COCOA11, Zhangjiajie, China, August 4–6, 2011.
- IFORS11, Melbourne, Australia, July 10–15, 2011.
- WCGO11, Crete, Greece, July 3–7, 2011 (*two contributions*).
- CTW11, Frascati, Rome, June 14–16, 2011 (*two contributions*).

- LSSC11, Sozopol, Bulgaria, June 6–10, 2011.
- ISBRA11, Changsha, China, May 27–29, 2011.
- SEA11, Crete, Greece, May 5–7, 2011.
- ROADEF11, Saint Etienne, France, March 2–4, 2011.
- IWCP10, BIBM11, Hong Kong, December 18–21, 2010.
- META10, Djerba, Tunisia, October 27–31, 2010.
- ICMS10, Kobe, Japan, September 13–17, 2010.
- TOGO10, Toulouse, France, August 31 – September 3, 2010.
- DMA10, ICDM10, Berlin, Germany, July 14, 2010.
- EURO10, Lisbon, Portugal, July 11–14, 2010.
- DMBIO10, Crete, Greece, July 7–9, 2010.
- EU/MEeting 2010, Lorient, France, June 2–4, 2010.
- AICCSA10, Hammamet, Tunisia, May 16–19, 2010.
- Grid5000 Spring School 2010, Lille, France, April 6–9, 2010.
- ROADEF10, Toulouse, France, February 24–26, 2010.
- CSBW09, BIBM09, Washington D.C., USA, November 1–4, 2009.
- ICBB09, Venice, Italy, October 28–30, 2009.
- WCO09, IMCSIT09, Mragowo, Poland, October 12–14, 2009.
- IFIP09, Buenos Aires, Argentina, July 27–31, 2009.
- GECCO09, Montréal, Canada, July 8–12, 2009.
- Engineering Systems Symposium at MIT, Cambridge, Massachusetts, USA, June 15–17, 2009.
- CTW09, Paris, France, June 2–4, 2009.
- FAME09, Orlando, Florida, USA, May 14–17, 2009.
- SAC09, Honolulu, Hawaii, USA, March 8–12, 2009.
- ROADEF09, Nancy, France, February 10–12, 2009.
- BBCC08, Avellino, Italy, December 12, 2008.
- Workshop “Journée Optimeo”, Université Paris-Sud XI, Orsay, France, November 21, 2008.
- ARS Workshop, École Polytechnique, Palaiseau, France, October 31, 2008.
- CCO08, Gainesville, Florida, USA, January 30 – February 1, 2008.
- Protein Folding Workshop, Minneapolis, USA, January 14–18, 2008.
- Biomedicine07, Gainesville, Florida, USA, March 28–30, 2007.
- BBCC06, Avellino, Italy, December 18, 2006.
- Biomedicine05, Gainesville, Florida, USA, February 2–4, 2005.
- CMS04, Neuchatel, Switzerland, April 2–5, 2004.
- Unravelling Nature’s Networks, Sheffield, England, July 20–22, 2003.



## Visiting Terms and Seminars

My active collaboration with Brazilian colleagues, working at different Universities in Brazil, is great opportunity for me travel to Brazil. This is a summary per year of my visits and given seminars:

- 2021 2 weeks at UFSC (CAPES-PRINT project);
- 2020 *covid-19 break*
- 2019 2 weeks at UNICAMP;
- 2018 12 days at UFSC; 7 days at UNICAMP (NMR workshop);
- 2017 7 days at UNICAMP;
- 2016 10 days at UFSC; 14 days at UNICAMP (2 visits);
- 2015 7 days at UFSC (1 seminar);
- 2014 5 days at UNICAMP (MFD workshop);
- 2013 7 days at UFRJ; 7 days at UNICAMP;
- 2012 2 month *chaire* at UNICAMP (1 seminar);
- 2011 10 days at UNICAMP; 2 weeks at UFRJ (1 seminar);
- 2010 2 weeks at UNICAMP (1 seminar);
- 2009 7 days at UFRJ.

Colleagues and visited Universities:

- COPPE, UFRJ, Rio de Janeiro, Nelson Macular (Professor Emerito);
- IMECC, UNICAMP, Campinas (São Paulo), Carlile Lavor (Full Professor);
- DM, UFSC, Florianópolis (Santa Catarina), Douglas Gonçalves (Assistant Professor).

This is my list of other visiting terms and seminars:

- Laboratoire des Sciences du Numérique, Nantes, 1 seminar. Invited by J. Idier. September 2020.
- School of Informations and Telecommunications, University of Granada. 4 days, 1 seminar. Invited by D. Pelta. May 2019.
- Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan. 2 weeks (in the framework of our joint CNRS-MoST project). Invited by J-H. Lin. April 2019.
- Institut Pasteur, Paris, France. 1 seminar (in the framework of our CNRS Infinity project). Invited by T. Malliavin. June 2018.
- Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan. 3 weeks (in the framework of our joint CNRS-MoST project). Invited by J-H. Lin. June and December 2018.
- Department of Control Systems and Mechatronics, Wroclaw University of Science and Technology, 3 days, 1 seminar. Invited by P. Drag. March 2018.
- IFSTTAR, Paris, France. 1 seminar. Invited by E. Dumont. November 2017.
- Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan. 10 days, 1 seminar. Invited by J-H. Lin. June 2017.
- Institute of Computer Technology, TU Vienna, Austria. 3 days, 1 seminar. Invited by N. TaheriNejad. April 2017.
- Laboratoire d'Informatique, Université d'Avignon, Avignon, France. 3 days, 1 seminar. Invited by R. Figueiredo. November 2016.
- INSA, Rennes, France. 1 seminar. Invited by M. Haddou. June 2016.
- Institut für Informatik, Universität Potsdam, Germany. 4 days, 1 seminar. Invited by T. Schaub. April 2016.
- Universidade de Aveiro, Portugal. 4 days, 1 seminar. Invited by A. Agra. May 2015.

- BAS, Sofia, Bulgaria. 3 days, 1 seminar. Invited by S. Fidanova. June 2014.
- ENSTA Bretagne, Brest, France. 1 seminar during the workshop “Set Computational for Control”. Invited by J. Ninin. December 2013.
- Department of Informatics, UNIFI, Florence, Italy. 1 seminar. Invited by F. Schoen. December 2012.
- Universidad Técnica Federico Santa Maria, Valparaíso, Chile. 2 weeks. Invited by A. Urtubia. CNRS-CONICYT project. November 2012.
- BIA, INRA, Toulouse, France. 1 seminar. Invited by M. Vignes. March 2012.
- Universidad Técnica Federico Santa Maria, Valparaíso, Chile. 7 days, 2 seminars. Invited by A. Urtubia. July 2011.
- LIPN, Université Paris 13, Paris, France. 1 seminar. Invited by R.W. Calvo. April 2011.
- LIRMM, Université Montpellier 2, Montpellier, France. 1 seminar. Invited by O. Gascuel. April 2011.
- IRIT, Toulouse, France. 1 seminar. Invited by F. Messine. April 2011.
- LAMIH, Université de Valenciennes, Valenciennes, France. 1 seminar. Invited by S. Hanafi. March 2011.
- CERFACS, Toulouse, France. 1 seminar. Invited by I. Duff. June 2010.
- LRI, Université Paris 11, Orsay, France. 1 seminar. Invited by Ch. Froidevaux. April 2010.
- Département de Mathématiques et d’Informatique, Université de Reims Champagne-Ardenne, Reims, France. 1 seminar. Invited by M. Krajecki. April 2010.
- LIPADE, Université Paris Descartes, Paris, France. 1 seminar. Invited by M. Nadif. April 2010.
- ENSEEIHT, Toulouse, France. 1 seminar. Invited by P.R. Amestoy. March 2010.
- IRISA, Rennes, France. 1 seminar. Invited by R. Andonov. December 2009.
- Université Paris 11, Orsay, France. 1 seminar. Invited by A. Lisser. April 2009.
- LAMSADE, Université Paris Dauphine, Paris, France. 1 seminar. Invited by A.R. Mahjoub. March 2009.
- CIRM, Marseille, France. Invited by M. Hirschowitz. March 2009.
- DIIGA, Università Politecnica delle Marche, Ancona, Italy. 1 seminar. Invited by F. Marinelli. February 2009.
- Department of Industrial Engineering, University of Florida, Gainesville, USA. 1 seminar. Invited by P.M. Pardalos. January 2007.
- IASI-CNR, Rome, Italy. 1 seminar. Invited by M. Sciandrone. September 2003.

## Supervisions

### Supervision of postdoc students

- Warley Gramacho, from September 2015 to August 2016.
- Douglas Soares Gonçalves, from April 2013 to March 2014.
- Andrea Cassioli, with L. Liberti (École Polytechnique), from October 2012 to December 2013.

### Supervision of PhD students

- Simon Benjamin Hengeveld, University of Rennes 1 and IRISA, started on February 2021.
- Virginia Silva Da Costa, with N. Maculan (Federal University of Rio de Janeiro), defended in 2013.
- Warley Gramacho, with C. Lavor (UNICAMP), defended in 2013.

## Supervision of visiting PhD students

- Rafael Santos Alves, PhD student from UNICAMP, Campinas, São Paulo, Brazil, 4 months, 2012.
- Maria Cristina De Cola, PhD student from IASI, CNR, Rome, Italy, 3 months, 2012.

## Supervision of Master student groups

- 7 student group, `binMeta` project, Miage program, level M2 (M.Sc), 1 month period (June 2021), full-time project.
- 4 student group, `binMeta` project, Miage program, level M1 (M.Sc), 4 month period (January–May 2021).

## Supervision of Master students (over a 6-month period)

- Florestan De Moor, ENS Rennes, 2019 (with D. Frey).
- Pierre Le Luron, University of Rennes 1, 2018 (with S. Collange).
- Florian Elain, INSA Rennes, 2017 (with L. Hoyet and R. Kulpa).
- Antonin Bernardin, University of Limoges, 2017 (with L. Hoyet).
- Thiruvikkiraman Pandurangan, `eit Digital`, University of Rennes 1, 2016.
- Ivaylo Petrov, IRISA Master Research, University of Rennes 1, 2014.
- Giovanni Cicia, Second University of Naples, 2006 (with M. D’Apuzzo).
- Enrico Raimondo, Second University of Naples, 2004 (with M. D’Apuzzo).
- Matilde Muto, Second University of Naples, 2003 (with M. D’Apuzzo).

## Supervision of undergraduate students

- Ariane Postel, University of Rennes 1, Bachelor first year, 2016.

## Committees

### *PhD level*

- PhD defense and reviewer of the monograph of Sammy Khalife, LIX, École Polytechnique, Palaiseau, France. August 31<sup>st</sup>, 2020.
- PhD follower committee, Othman Toujier, INSA Rennes, Rennes, years 2018–19 (in French, *comité de suivi individuel doctorant*).
- PhD qualification, Julie Laniau, University of Rennes 1, Rennes, France, October 1<sup>st</sup>, 2015.
- PhD defense, Germano Abud de Rezende, UNICAMP, Campinas, São Paulo, Brazil, August 28<sup>th</sup>, 2014.
- PhD defense, Virginia Silva Da Costa, UFRJ, Rio de Janeiro, Brazil, February 21<sup>st</sup>, 2013.
- PhD defense, Rafael Santos Alves, UNICAMP, Campinas, São Paulo, Brazil, February 25<sup>th</sup>, 2013.

### *Master level*

- Master committee member for the `eit Digital` Master School (level 1), as well as for other two Master 1 programs at University of Rennes 1. Since academic year 2019–20.
- Master thesis defense, Master BIG, SVE, University of Rennes 1, Rennes, France, June 20<sup>th</sup>, 2014.

## Computer-related skills

- Programming Languages: C, C++, Java, Scala, JUnit, Fortran 77/90, javascript, PHP, Matlab, Python.
- Operating Systems: UNIX, Linux, Windows.
- Linear Algebra Packages: BLAS, LAPACK.
- Optimization Systems and Software: CPLEX, AMPL and others, both commercial and free.
- Parallel Computing Packages: OpenMP, MPI, SCALAPACK, CUDA.

## Developed software

### MD-JEEP

*Implementation of:* the Branch and Prune algorithm for discretizable distance geometry

*Programming language:* C

*Description:* This is an implementation of the Branch & Prune (BP) algorithm for solving discretizable Distance Geometry Problems (DGPs) [15, 18, 20]. MD-JEEP is the result of a strong collaboration among myself, Leo Liberti, Carlile Lavor, Douglas Gonçalves, Jung-Hsin Lin, Nelson Maculan, and other people. The details regarding the discretization of the DGP and the BP algorithm can be found in our publications. MD-JEEP is distributed under the GNU General Public Licence (v.3), and it is available on GITHUB since the version 0.3.0. Details about the first release of MD-JEEP can be found in [67]. Details about the latest releases can be found in [41,43,44].

*Sources available for download:* <http://www.antoniocherino.it/en/mdjeep.php>.

*Current release:* 0.3.2

### Other software

Other developed software includes:

- A tool for feature selection that is based on consistent biclustering [84]. This tool is written in AMPL and invokes CPLEX for the solution of the inner problem arising in our bilevel reformulation [116], which is linear. The tool can be made available upon request.
- An implementation in C programming language of the Monkey Search Meta-Heuristic. This implementation can be made available upon request.

## Languages

- Italian: mother tongue.
- English: excellent spoken and written.
- French: good spoken and written.

# Publications

## International journals

1. S. Hengeveld, N. Rubiano da Silva, D.S. Gonçalves, P.H. Souto Ribeiro, A. Mucherino, *An Optical Processor for Matrix-by-Vector Multiplication: an Application to the Distance Geometry Problem in 1D*, Journal of Optics **24**(1), 015701, 2022. Preliminary version deposited on arXiv:2105.12118v1 in May 2021.
2. J. Omer, A. Mucherino, *The Referenced Vertex Ordering Problem: Theory, Applications, and Solution Methods*, Open Journal of Mathematical Optimization **2**, article no. 6, 29 pages, 2021. Preliminary version deposited on HAL open archives (hal-02509522, version 1) in March 2020.
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11. D.S. Gonçalves, A. Mucherino, *Optimal Partial Discretization Orders for Discretizable Distance Geometry*, International Transactions in Operational Research **23**(5), 947–967, 2016.
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13. D.S. Gonçalves, A. Mucherino, *Discretization Orders and Efficient Computation of Cartesian Coordinates for Distance Geometry*, Optimization Letters **8**(7), 2111–2125, 2014.
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### Book chapters (refereed)

77. A. Mucherino, *Manipulating Two-Dimensional Animations by dynamical Distance Geometry*. In: “Recent Advances in Computational Optimization”, S. Fidanova (Ed.), Studies in Computational Intelligence **838**, 147–153, 2020.
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