DR. TAMARA MCHEDLIDZE

CONTACT

Karlsruhe Institute of Technology (KIT)
Institute of Theoretical Informatics
Am Fasanengarten 5
76131 Karlsruhe Germany
☏ 0721 608 44245
@ tamara.mtsentlintze@kit.edu, mched@iti.uka.de

EDUCATION

- **Ph.D. in Applied Mathematics** School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
  Thesis: Graph Theory Problems with Emphasis on Graph Drawing.
  Supervisor: Prof. Antonios Symvonis.
  Awarded in December 2011.

- **MS in «Mathematical Modeling in Modern Technologies and Financial Engineering»** School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
  GPA: 8,74 (out of 10).
  Awarded in February 2009.

- **Diploma in Applied Mathematics and Physical Sciences.** School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
  Directions: Computer Science, Statistics.
  GPA: 8,34 (out of 10).
  Awarded in May 2007.
  Awarded a Diploma of Excellence from Technical Chamber of Greece (TEE).

PROFESSIONAL EXPERIENCE

2012-Present: Postdoc & Member of **Algorithmics Group**, Institute of Theoretical Informatics, **Karlsruhe Institute of Technology (KIT)**

January 2012 - January 14: Full time employment
February 2014 - May 2014: Maternity leave
June 2014 - June 2015: Part-time employment 50%
July 2015 - July 2016: Part-time employment 75%
August 2016 - Present: Full time employment

2003 - 2006 Software Developer at AMCO, Athens, Greece.

Member of Mathematical Olympiad Competition Committee of the Hellenic Mathematical Society (E.M.E.)

Deputy Leader of the Greek Team in 14th and 15h Junior Balkan Mathematical Olympiads.

RESEARCH INTERESTS

Algorithmic Graph Theory
Network Visualization and Graph Drawing
Computational Geometry
Information Visualization and Human Computer Interaction
Networks in the Humanity Sciences.

SCHOLARSHIPS GRANTS

2015-2018 "**Generalization and Interaction in Graph Drawing**"
German Research Foundation-DFG research grant.
In collaboration wth Prof. D. Wagner and Dr. I. Rutter.
€250 000

2011 "Analysis of large-Scale Spatio-Temporal datasets and their Applications to Smart Cities' Management"
IRCSET postdoctoral Fellowship at IBM Research, Ireland
I declined the fellowship due to offer from KIT.

2011-2012 "**Graph Theory Problem Solving with Emphasis in their Drawings**."
Personal Research Grant.
Ministry of Education, Lifelong Learning and Religious Affairs, Program "Heraclitus II"
€ 22 500 of total amount € 45 000. Funding was suspended due to graduation.

2011 Six month research grants for young researchers.
DAAD: German Academic Exchange Service.
Host institution: University of Tübingen, Germany.
€7 000.

2008-2011 Scholarship for Research based on academic merit of National Technical University of Athens.

2006-2007 Scholarship for highest GPA.
MS program «Mathematical Modeling in Modern Technologies and Financial Engineering». National Technical University of Athens.

2000- 2006 Scholarship from Ministry of Foreign Affairs for undergraduate studies based on academic merit.

AWARDS

2018 Best paper award in Track B for the paper "Aesthetic Discrimination of Graph Layouts" at International Symposium on Graph Drawing and Network Visualization.

2017 First place in "Graph Drawing" challenge, automatic category.
Topic "Drawing graph with high crossing resolution".
Hold at International Symposium on Graph Drawing 2017.
In collaboration with M. Radermacher and students of KIT A. Demel, L. Wulf und D. Dürrschnabel.
http://www.graphdrawing.de/contest2017/results.html

2016 Award for "Best practical course" for the "Practical Course on Graph Visualization",
The course was taught in collaboration with M. Nöllenburg.

2016 Graph Drawing 2016 Contest Award.
Creative topic "Greek Mythology".
Joint work with J. Klawitter.
http://graphdrawing.de/contest2016/results.html

2016 Graph Drawing 2016 Best Poster Award.
for the poster "Heuristic Picker for Book Drawings"
Joint work with J. Klawitter.
http://algo.math.ntua.gr/~gd2016/index.php?id=best-presentation-award

2015 Graph Drawing 2015 Contest Award.
Creative topic "Graph Classes".
http://www.graphdrawing.de/contest2015/results.html

2014 First place in "Graph Drawing" challenge, automatic category.
Topic "Area Minimization for Orthogonal Grid Layouts".
Hold at International Symposium on Graph Drawing 20174
In collaboration with Dr. M.Nöllenburg and students A. Khomenko, I. Karlinsky, and D. Knöpfle
http://www.graphdrawing.de/contestwinners.html

2012 Award for "Best exercise sessions" for the lecture "Algorithms for Graph Visualization", The lecture taught in collaboration with Dr. M. Nöllenburg, Dr. I. Rutter.

2009 Thomaidio Award for "Advancements of Sciences and Arts" for publication during undergraduate studies. National Technical University of Athens.

2006 Diploma of Excellence from Technical Chamber of Greece (TEE).

PROGRAM COMMITTEE SERVICE

CCCG2018 30th Canadian Conference on Computational Geometry .

ESA2018 26th European Symposium on Algorithms, Applied track.

GD15 24th International Symp. on Graph Drawing & Network Visualization, Theoretical track.

IISA14 - IISA16 International Conference on Information, Intelligence, Systems and Applications

PEER-REVIEW ACTIVITIES

International Journals

- Algorithmica
- Journal of Applied Mathematics and Computing
- The Computer Journal
- Journal of Discrete Mathematics
- Journal of Graph Algorithms and Applications
- Journal of Computational Geometry: Theory and Applications
- Journal of Discrete & Computational Geometry
- Journal of Discrete Algorithms
- Information Processing Letters
- IEEE Transactions on Visualization and Computer Graphics

International Conferences

- COCOON: International Computing and Combinatorics Conference
- GD: International Symposium on Graph Drawing
- SODA: ACM-SIAM Symposium on Discrete Algorithms
- WG: International Workshop on Graph-Theoretic Concepts in Computer Science
- INFOVIS: IEEE Information Visualization Conference
- PACIFICVIS: IEEE Pacific Visualization Symposium
- EUROVIS: EG/VGTC Conference on Visualization

WORKSHOP ORGANIZATION

- **Network Visualization in the Humanities**
  Interdisciplinary Dagstuhl seminar. November 25-30, 2018.
  In collaboration with Prof. K. Börner (Indiana University – Bloomington, US) Prof. D. Edelstein (Stanford University, US) Prof. G. Scheuermann (Universität Leipzig, DE), Prof. R. G. Siemens (University of Victoria, CA).

- **GNV: Graph and Network Visualization**
  Kloster Heiligkreutal. June 25-30, 2017.
  In collaboration with Prof. M. Kaufmann, Dr. P. Angelini, Dr. M. Bekos (U. of Tübingen, DE)

PARTICIPATION IN WORKSHOPS

COMPUTER SCIENCE

- **Bertinoro Workshops on Graph Drawing**
  University Residential Center of Bertinoro.
  March 2018, 2017, 2016, 2015, 2013, 2012, 2011.
- **NRIA-McGill-Victoria Workshops on Problems in Computational Geometry**
  Bellairs Research Institute, McGill University in Barbados. January 2016, 2013, 2012.
- **Dagstuhl Seminar: "Scalable Set Visualization".**
  Schloss Dagstuhl. August 2017.
- **Dagstuhl Seminar: "Empirical Evaluation of Graph Drawing".**
  Schloss Dagstuhl. January 2015.
- **Dagstuhl Seminar: "Drawing Graphs and Maps with Curves".**
  Schloss Dagstuhl. April 2013.
- **Dagstuhl Seminar: "Graph Drawing with Algorithm Engineering Methods".**
  Schloss Dagstuhl. May 2011.

PROFESSIONAL DEVELOPMENT

- Module **"Teaching and Learning 1"** as a part of the requirements for the "Baden-Württemberg Certificate for Teaching and Learning at University Level".
- **"Teaching as a rock star"**.
  University of Heidelberg. February 2018
  Part of the requirements for the "Baden-Württemberg Certificate for Teaching and Learning at University Level".
- **"Supervising the doctorate".**
  University of Heidelberg, November 2017
  Part of the requirements for the "Baden-Württemberg Certificate for Teaching and Learning at University Level".
- **"Ein Leben in Balance?! Wie erreiche ich mehr Ausgewogenheit im Leben.",**
  Karlsruhe Institute of Technology. May 2017
- **"University Teaching for a Balanced Society"**,
  University of Stuttgart. April 2017.
  Part of the requirements for the "Baden-Württemberg Certificate for Teaching and Learning at University Level".

OUTREACH

Installation **OpMAP: what should one eat?** at the exhibition Open Codes, ZKM|Center for Art and Media. Duration 20.10.2017 - 31.12.2018. Demonstration of the tool OpMAP, intended for analysis and visualization of large debates. **https://opmap.github.io**

TEACHING: UNIVERSITY LEVEL

GRADUATE LEVEL

Algorithmic Methods in Humanities - interdisciplinary seminar
In collaboration with Prof. G. Betz (Institute of Philosophy, KIT) , L.. Czech (Heidelberg Institute for Theoretical Studies) , M. Hamann, PD Dr. phil M. Rupp (Institute for German Studies, KIT), Prof. A. Stamatakis, Dr. D. Tonne (Institute for Data Processing and Electronics, KIT)
Karlsruhe Institute of Technology.
Summer terms 2016, 2017.

Computational Geometry - graduate course
In collaboration with Dr. C.-H. Liu: summer term 2018
In collaboration with Dr. D. Strash: winter term 2015-2016
Karlsruhe Institute of Technology.

Practical Course on Graph Visualization - graduate course
In collaboration with Dr. M. Nöllenburg
Karlsruhe Institute of Technology.
Summer terms 2015, 2017.

Algorithms for Graph Visualization - graduate course
Karlsruhe Institute of Technology.
Independently: winter terms 2016, 2017
In collaboration with Dr. M. Nöllenburg: winter term 2014
In collaboration with Dr. M. Nöllenburg, Dr. I. Rutter: winter terms 2012, 2013

UNDERGRADUATE LEVEL

Algorithms for Planar Graphs - undergraduate course
In collaboration with Prof. D. Wagner.
Karlsruhe Institute of Technology.
Summer term 2014.

Practical Course on Software Engineering (PSE) - undergraduate course
In collaboration with T. Bläsius.
Karlsruhe Institute of Technology .
Summer terms 2012, 2013.

Data Structures - undergraduate course
Teaching Assistant.
School of Applied Mathematics & Physical Sciences National Technical University of Athens.
Academic year 2009.

Algorithms and Complexity - undergraduate course
Teaching Assistant.
School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
Academic years 2009, 2010.

Design and Development of Software Applications in Java - undergraduate course
Teaching Assistant.
School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
Academic year 2008.

Introduction to Programming (Java) - undergraduate course
Teaching Assistant.
School of Applied Mathematics & Physical Sciences. National Technical University of Athens.
Academic years 2008, 2010.

TEACHING: OTHER

Introduction to Combinatorics
3rd Mathematics Summer School of Hellenic Mathematical Society (E.M.E.).
Leprokaria, Pieria, Greece. July 2009.

Combinatorics and Introduction to Graph Theory
Hellenic Mathematical Society.
Preparation for the International Mathematical Olympiad.
Athens. December 2010, May 2009, May 2008.

Elementary Algebra
4th Mathematics Summer School of Hellenic Mathematical Society (E.M.E.).
Leprokaria, Pieria, Greece. July 2010.

SUPERVISED STUDENTS

PHD THESIS

Marcel Radermacher
Topic: Generalization and Interaction in Graph Drawing
Funded by DFG research grant"**Generalization and Interaction in Graph Drawing**"
Since 2015.

MASTER'S THESIS

Moritz Krammler
Topic: Aesthetic Value of Graph Layouts - Investigation of Statistical Syndromes for Automatic Quantification.
Co-advised with Dr. A.Pak (Chair for Interactive Real-Time Systems, KIT)
September 2017 - March 2018.

Sophie von Schmettow
Topic: Analysis of Opinion Spaces through Cartographic Metaphor.
Co-advised with Prof. G. Betz (Institute of Philosophy, KIT) , M.Hamann
Results presented at the exhibition Open Codes, ZKM|Center for Art and Media.
July - December 2017.

Jérôme Urhausen
Topic: Drawing with fixed inner face: the case of a star.
April - October 2017.

Sebastian Schlund
Topic: On smoothing paths in layered graph drawing. In progress.
June - December 1016

Jonatthan Klawitter
Topic: Experimenting with book embeddings.
Results published at International Symposium on Graph Drawing 2016, 2017. References c-3 and c-7.
October 2015 - April 2016.

Denis Knöpfle
Topic: On drawing planar triangulations with bends.
August 2015 - February 2016.

Christian Schmitz
Topic: Experimental study on the Wind Farm Substation Cable Installation Problem.
Co-advised with Dr. Martin Nöllenburg, Dr. Hung-I Yu
January - June 2014.

Fabian Klute
Topic: Connecting Points with Low-Complexity Polynomial Curves in a Polygon.
Co-advised with Dr. I. Rutter and T. Bläsius
November 2014 - April 2015.

Franziska Wegner
Topic: Algorithmic Aspects in Power Flow Calculation.
Co-advised with Dr. I. Rutter and Dr. Martin Nöllenburg.
October 2013 - March 2014.

BACHELOR THESIS

Jonas Haas
Topic: Aesthetic functions for Text-Variant Graphs.
In progress.

Rebecca Seelos
Topic: A Survey of Network Visualization in Humanities.
December 2016 - April 2017.

Christian Schnorr
Topic: Minimizing Potential Energy in Constrained Physical Systems and Applications to Graph Drawing.
December 2016 - March 2017.

Nina Zimbel
Topic: Unpacking Planar Clustered Graphs: To Bend or not to Bend?
Results published at European Workshop on Computational Geometry (EuroCG 2018).
Co-advised with M.Radermacher
December 2016 - March 2017.

Germaine Götzelmann
Topic: Alignment and stemma construction for ancient Egyptian manuscripts.
Co-advised with M.Hamann and Dr. D. Tonne
October 1016 - February 2017.

Sarah Lutteropp
Topic: On Layered Drawings of Planar Graphs.
Co-advised with T.Bläsius and Dr. T.Ueckerdt
January - May 2014.

OTHER

Hannes Wächter
Diploma thesis
Topic: Impact of the shape of a graph layout on its attractiveness.
Co-advised with Prof. Claus-Christian Carbon (Department of General Psychology and Methodology, University of Bamberg)
Results published at VSAC 2017: Visual Science of Art Conference. Reference c-1
April - November 2016.

Boris Klemz
Study thesis
Topic: Drawability of Euler Diagrams.
Co-advised with Dr. M.Nöllenburg
Results published at SWAT 14: 14th Scandinavian Symposium and Workshops. Reference c-15.
July - October 2014.

Sarah Lutteropp
undergraduate research project funded by "Stipendium der Begabtenstiftung Informatik"
Topic: Direction Consistent Point Set Embedding.
Results published at Journal of Graph Algorithms and Applications. Reference j-8.
2013.

LANGUAGES

- English : excellent command
- Russian : native
- Greek : native
- German : basic communication skills