

# Daniel Wolleb-Graf

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## Education

### Doctorate in Computer Science – ETH Zurich, Switzerland – September 2015 to January 2019

- PhD thesis on *Digraph Reachability Algorithms*  
Advisor: Prof. Dr. Peter Widmayer, Institute of Theoretical Computer Science, [ti.inf.ethz.ch](http://ti.inf.ethz.ch)  
Group for *Algorithms, Data Structures, and Applications*, [www.pw.ethz.ch](http://www.pw.ethz.ch)

### Master of Science in Computer Science – ETH Zurich, Switzerland – September 2013 to August 2015

- Final grade point average: 5.99 \*
- Focus track: Theoretical Computer Science
- Master thesis on *Scheduling and Sorting Algorithms for Robotic Warehousing Systems*  
Advisors: Katerina Böhmova and Prof. Dr. Peter Widmayer, details: [dgraf.ch/treesort](http://dgraf.ch/treesort)

### Exchange Semester – University of Washington, Seattle, USA – April to August 2013

- Visiting graduate student in Computer Science, grade point average: 4.0 \*\*
- Two summer research projects with Prof. Dr. Luke Zettlemoyer in artificial intelligence and with Prof. Dr. Ira Kemelmacher-Shlizerman in computer vision and video processing

### Bachelor of Science in Computer Science – ETH Zurich, Switzerland – September 2010 to August 2013

- Final grade point average: 5.91 \*
- Bachelor thesis on *Image Retargeting for Mobile Devices*  
Advisors: Dr. Daniele Panozzo and Prof. Dr. Olga Sorkine-Hornung, details: [refoorm.at](http://refoorm.at)

### Matura, Swiss High School Degree – Kantonsschule Sargans, Switzerland – August 2005 to July 2009

- Degree with focus on physics and applied mathematics, final grade point average: 5.89 \*

## Awards

### ETH D-INFK Willi Studer Award 2016

- Awarded for the best Master degree of the year in the Department of Computer Science

### ETH Excellence Scholarship 2013

- Awarded for the Master studies at ETH Zurich

### International Olympiad in Informatics

- Bronze medal at the International Olympiad in Informatics (IOI), August 2009 in Bulgaria
- Participation at the Central European Olympiad in Informatics (CEOI), July 2009 in Romania
- Gold medal at the Swiss National Olympiad in Informatics (SOI), June 2009

### ACM ICPC (International Collegiate Programming Contest)

- 2<sup>nd</sup> Place for ETH Zurich at the SWERC regional contest in Valencia 2013 and in Porto 2014 (out of 44/36)
- ACM ICPC World Finals in June 2014 in Yekaterinburg, Russia and in May 2015 in Marrakech, Morocco
- 1<sup>st</sup> Place at the Helvetic Coding Contest at EPFL in 2014 (out of 54), 3<sup>rd</sup> places in 2012, 2015 & 2017

### Various Computer Science Contests

- Google Hash Code March 2016: Qualification: 41<sup>st</sup> Place (out of 1054), Finals in Paris: 8<sup>th</sup> Place (out of 50)
- Facebook Hackathon April 2013: 2<sup>nd</sup> Place at the Pacific Northwest Regional in Seattle
- Swiss Youth in Science 2010: Top-grade *excellent* for end of high school project about the game-theoretical analysis of a Swiss card game, presented at the European Science Expo in Moscow
- Robot Team Challenge 2008: 1<sup>st</sup> place with a self-navigating robot

\* Switzerland uses a 6-point grading system, where 6 represents *excellent*, 4 *pass* and 1 *very poor*.

\*\* The University of Washington uses a 4-point grading system, where 4 represents *excellent* and 0 *very poor*.

## Work Experience

**Software Engineering Internship at Apple**, Apple Maps Traffic, February to May 2018, Sunnyvale, CA

**Software Engineering Internship at Google**, Youtube Content ID, September to December 2014, Zurich

## Teaching Experience

**Teaching Assistant, Algorithms Lab**, Fall 2015, 2016, 2017, ETH Zurich

- Taught biweekly two-hour lectures, created coding exercises and 12 hour final exam for 150 students

**Teaching Assistant, Algorithms and Data Structures**,

Spring 2014, 2015, 2016, Fall 2016, Prof. Dr. Peter Widmayer, ETH Zurich

- Taught exercise classes for two hours a week and graded weekly assignments of 20 students
- Involved in designing and organizing computer-based coding exam for 280 students in February 2017

**Teaching Assistant, Discrete Mathematics**, Fall 2012, Prof. Dr. Ueli Maurer, ETH Zurich

- Taught exercise classes for two hours a week and graded weekly assignments of 20 students

**Student Project Supervisor**, 2017, ETH Zurich

- Supervised the Master thesis of Kieran Nirikko (jointly with Prof. Dr. Peter Widmayer), the Master thesis of Karim Labib and a summer research internship of Stefan Tiegel (both jointly with Dr. Przemysław Uznański)

**Main Organizer, Swiss Olympiad in Informatics**, 2010 - 2016, [soi.ch](http://soi.ch)

- Prepared tasks, training camps and workshops all over Switzerland with lectures on various algorithms
- Lead trips of Swiss teams to BOI in Romania and IOI in Italy, Taiwan, Kazakhstan and Russia
- Problem author at the International Olympiad in Informatics 2017 in Tehran, Iran: [ioi2017.org/contest/tasks/](http://ioi2017.org/contest/tasks/)

**Problem Setter and Coach, ACM ICPC Team of ETH Zurich**, 2015 - 2017, [acm.vis.ethz.ch](http://acm.vis.ethz.ch)

- Organized and executed the local team selection contest with 75 contestants jointly with EPF Lausanne.

## Research Experience

Research Interests: graph algorithms, data structures, algorithm engineering, computer graphics, CS education

Selected Publications (see [dgraf.ch](http://dgraf.ch) for a full list of publications):

- Amir Abboud, Loukas Georgiadis, Giuseppe F. Italiano, Robert Krauthgamer, Nikos Parotsidis, Ohad Trabelsi, Przemysław Uznański, [D. W.-G.](#): *Faster Algorithms for All-Pairs Bounded Min-Cuts*, ICALP 2019.
- Karim Labib, Przemysław Uznański, [D. W.-G.](#): *Hamming Distance Completeness*, CPM 2019 *Best Paper*.
- Loukas Georgiadis, [D. G.](#), Giuseppe F. Italiano, Nikos Parotsidis, Przemysław Uznański: *All-Pairs 2-Reachability in  $O(n^\omega \log n)$  Time*, ICALP 2017.
- Andreas Bärtzchi, [D. G.](#), Paolo Penna: *Truthful Mechanisms for Delivery with Mobile Agents*, ATMOS 2017.
- Samuel Grütter, [D. G.](#), Benjamin Schmid: *Watch them Fight! Creativity Task Tournaments of SOI, IOI* 2016.
- [Daniel Graf](#): *How to Sort by Walking on a Tree*, ESA 2015, Algorithmica 2017, [dgraf.ch/treesort](http://dgraf.ch/treesort).
- [D. G.](#), Daniele Panozzo, Olga Sorkine-Hornung: *Mobile Image Retargeting*, VMV 2013, [refooorm.at](http://refooorm.at).

External Reviewer for Conferences: ESA'18, LATIN'16, IWOCOA'16, FUN'16, SIROCCO'16, ATMOS'16

## Additional Information

- Computer skills: C, C++, Objective-C, Python, MATLAB, Eiffel, Java, LaTeX, Linux, macOS, Final Cut Pro
- Extracurricular activities:
  - Organizer of sports and trekking camps as a scout guide, January 2005 to December 2014
  - Mandatory military service in the computer network operations division, October 2009 to August 2010
  - Hobbies: photography, piano, hiking
- Languages: German (native), English (fluent), French (good), Russian (beginner)

## References

I am happy to provide references upon request.