

# Curriculum Vitae

William (Will) Rosenbaum

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Max Planck Institute for Informatics  
D1: Algorithms and Complexity  
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Germany  
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- EMPLOYMENT**
- Max Planck Institute for Informatics**, Saarbrücken, Germany  
Postdoctoral Researcher  
August 2018–present
  - Tel Aviv University**, Tel Aviv, Israel  
Postdoctoral Fellow  
School of Electrical Engineering  
August 2016–July 2018
  - University of California**, Los Angeles, CA  
Assistant Adjunct Professor  
Mathematics Department  
Spring 2016
- EDUCATION**
- University of California**, Los Angeles, CA  
Ph.D. in Mathematics, Winter 2016  
M.A. in Mathematics, Spring 2011  
Advisor: Rafail Ostrovsky  
Dissertation: *Distributed Almost Stable Matchings*
  - Reed College**, Portland, OR  
B.A. in Mathematics, Spring 2009  
Advisor: Jerry Shurman  
Thesis: *Analysis on Circles: A Modern View of Fourier Series*
- ACADEMIC INTERESTS**
- Computer Science:** Distributed, Approximation, and Randomized Algorithms; Computational Complexity; Algorithmic Game Theory
  - Pure Mathematics:** Discrete Math/Combinatorics (Graph Theory); Probability
- AWARDS & FUNDING**
- Postdoctoral Scholarship**  
Tel Aviv University, 2016–2017  
Scholarship awarded to at most 20 postdocs university-wide
  - Travel Grant**  
Max Planck Advanced Course on the Foundations of Computer Science (AD-FOCS), Saarbrücken, Germany, August, 2016
  - Teaching Assistant Consultantship**  
Department of Mathematics, UCLA, Fall 2015

**Student Travel Grant**

Association of Computing Machinery, PODC, 2015

**Graduate Student Instructorship**

Department of Mathematics, UCLA, 2014

**Robert Sorgenfrey Distinguished Teaching Award**

Department of Mathematics, UCLA, 2013

**Phi Beta Kappa**

Reed College, 2009

**Commendation for Academic Achievement**

Reed College, 2004–2005, 2006–2007, 2007–2008, 2008–2009

REFEREED  
CONFERENCE  
PROCEEDINGS

*Space-Optimal Packet Routing on Trees* (with Boaz Patt-Shamir), IEEE International Conference on Computer Communications (INFOCOM), 2019.

*Lower Bounds for Approximating Graph Parameters via Communication Complexity* (with Talya Eden), Approximation, Randomization, and Combinatorial Optimization (APPROX/RANDOM), 2018.

*On Sampling Edges Almost Uniformly* (with Talya Eden), Symposium on Simplicity in Algorithms (SOSA), 2018.

*The Space Requirement of Local Forwarding on Acyclic Networks* (with Boaz Patt-Shamir), ACM Symposium on Principles of Distributed Computing (PODC), 2017.

*Space-Time Tradeoffs for Distributed Verification* (with Rafail Ostrovsky and Mor Perry), International Colloquium on Structural Information and Communication Complexity (SIROCCO), 2017.

*Brief Announcement: Space-Time Tradeoffs for Distributed Verification* (with Mor Baruch and Rafail Ostrovsky), ACM Symposium on Principles of Distributed Computing (PODC), 2016.

*Fast Distributed Almost Stable Matchings* (with Rafail Ostrovsky), ACM Symposium on Principles of Distributed Computing (PODC), 2015.

*A Stable Marriage Requires Communication* (with Yannai Gonczarowski, Noam Nisan, and Rafail Ostrovsky), ACM-SIAM Symposium on Discrete Algorithms (SODA), 2015. **Invited** to appear in a special issue of *Games and Economic Behavior* on algorithmic game theory.

*It's Not Easy Being Three: The Approximability of Three-Dimensional Stable Matching Problems* (with Rafail Ostrovsky), International Workshop on Matching Under Preferences (MATCH-UP), 2015.

MANUSCRIPTS

*Distributed Almost Stable Matchings* PhD Thesis, UCLA, 2016.

*Analysis On Circles: A Modern View of Fourier Series* Undergraduate Thesis, Reed College, 2009.

TEACHING

**Instructor**, UCLA

- PIC 10B – Intermediate Programming (C++).
- Math 32AH – Honors Multivariable Differential Calculus.

**Teaching Assistant Consultant**, UCLA (Fall 2015)

- Math 495 – Teaching College Mathematics.

**Assistant Instructor**, Los Angeles Math Circle (Sept. 2014 – June 2015)

**Teaching Assistant**, UCLA (September 2009 – June 2015)

Average teaching evaluation: 8.7 / 9

- Math 3A – Calculus for Life Sciences.
- Math 31A – Differential Calculus.
- Math 32A/BH – Honors Multivariable Calculus.
- Math 32A/B – Multivariable Calculus.
- Math 33B – Differential Equations.
- Math 61 – Discrete Mathematics.
- Math 115AH – Honors Linear Algebra.
- Math 131A – Real Analysis.
- PIC 10A – Introduction to Programming (C++).

**Teaching Assistant**, Reed College (August 2007 – May 2009)

- Physics 100 – Introductory Physics.

- PRESENTATIONS
- Resilient Hardware Design Workshop, Mainz, Germany, March, 2018.
  - Symposium on Simplicity in Algorithms, New Orleans, LA, January 2018.
  - Distributed Computing Seminar, Tel Aviv University, December 2017.
  - ACM Symposium on Principles of Distributed Computing (PODC), Washington DC, July 2017.
  - Distributed Computing Seminar, Technion Israel Institute of Technology, May 2017.
  - Engineering Seminar, Bar-Ilan University, May 2017.
  - Networking Agora, Ben Gurion University, May 2017.
  - Algorithms Seminar, Tel Aviv University, April 2017.
  - Israeli Networking Day, Netanya, Israel, March 2017.
  - ACM Symposium on Principles of Distributed Computing (PODC). Chicago, IL, July 2016.
  - AMS/MAA Joint Math Meetings. Seattle, Washington, January 2016.
  - Los Angeles Math Circle. October 2015.
  - 42nd Annual Teaching Assistant Conference. UCLA, September 2015.
  - ACM Symposium on Principles of Distributed Computing (PODC). San Sebastián, Spain, July 2015.
  - International Workshop on Matching Under Preferences (MATCH-UP). Glasgow, UK, April 2015.
  - Math Colloquium, Reed College, February 2015.
  - Participating Logic Seminar, UCLA, Spring 2014.

- ATC talk, UCLA, March 2014.
- Participating Probability Seminar, UCLA, Fall 2012.
- Participating Probability Seminar, UCLA, Spring 2012.
- Participating Combinatorics Seminar, UCLA, Fall 2011.
- American Physical Society, March Meeting, 2008.
- Physics Department Colloquium, Reed College, September 2007.
- Summer REU Presentation, Bucknell University, August 2007.

WORKSHOPS ATTENDED	<p><i>SPP Winter School on Algorithms for Big Data</i>, Tel Aviv University, November 2017.</p> <p><i>French-Israeli Laboratory on Foundations of Computer Science</i>, Tel Aviv, Israel University, November 2017.</p> <p><i>Randomness, Complexity, and Cryptography</i>, Weizmann Institute, Rehovot, Israel, April 2017.</p> <p><i>Israeli Networking Day</i>, Cisco Systems, Natanya, Israel, March 2017.</p> <p><i>Young Researcher Workshop on Economics and Computation</i>, Tel Aviv, Israel, January 2017.</p> <p><i>Israel CS Theory Day</i>, The Open University, Ra'anana, Israel, January 2017.</p> <p><i>Max Planck Advanced Course on the Foundations of Computer Science (ADFOCS)</i>, Saarbrücken, Germany, August, 2016.</p> <p><i>Teaching Assistant Consultant Central Seminar</i>, UCLA, Los Angeles, CA, Fall 2015.</p> <p><i>Information Complexity and Applications</i> at the ACM Symposium on the Theory of Computing, Palo Alto, CA, June 2013.</p> <p><i>Extremal and Probabilistic Combinatorics</i>, Los Angeles, CA, January 2013.</p>
SERVICE	<p><b>Peer reviewer</b> <i>Algorithmica</i>, <i>Distributed Computing</i>, <i>ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)</i>, <i>EATCS International Symposium on Distributed Computing (DISC)</i>, <i>EATCS International Colloquium on Automata, Languages and Programming (ICALP)</i>, <i>IEEE International Parallel and Distributed Processing Symposium (IPDPS)</i>, <i>ACM Symposium on Principles of Distributed Computing (PODC)</i> <i>International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)</i>.</p>
PROFESSIONAL ORGANIZATIONS	<p><b>AMS</b> American Mathematical Society</p> <p><b>MAA</b> Mathematical Associate of America</p> <p><b>ACM</b> Association for Computing Machinery</p> <p><b>SIAM</b> Society for Industrial and Applied Mathematics</p> <p><b>IEEE</b> Institute of Electrical and Electronics Engineers</p>
GRADUATE COURSEWORK	<p><b>Discrete Math</b> Topics in Combinatorics, Probabilistic Methods in Combinatorics, Algebraic Methods in Combinatorics, The Symmetric Group, Algebraic Number Theory, Additive Combinatorics, Expander Graphs</p>

**Computer Science** Randomized Algorithms, Cryptography, Communication Complexity

**Probability & Analysis** Measure Theory, Probability Theory, Stochastic Processes, Applied Probability

**Geometry & Topology** Differential Topology, Differential Geometry, Algebraic Topology (Qualifying Exam Passed)

**Algebra** Abstract Algebra, Commutative Algebra (Qualifying Exam Passed)

UNDERGRAD  
RESEARCH  
EXPERIENCE

**Math REU** Mount Holyoke College, Summer 2008. Summer research program on number theory with Professor Giuliana Davidoff. Explored class numbers and relative class numbers for quadratic number fields. Developed numerical algorithms to test our conjectures.

**Physics REU** Bucknell University, Summer 2007. Summer research program on statistical physics with Professor Ben Vollmayr-Lee. Worked on theoretical aspects of coarsening models in three dimensions. Found explicit description of equilibrium shapes for a coarsening model with surface anisotropy. Presented findings at the American Physical Society's March Meeting in 2008.

COMPUTING

**Languages:** C/C++, HTML/CSS/JavaScript, Python

**Miscellaneous:**  $\LaTeX$

OTHER  
SKILLS

**Spanish** Working proficiency

**German** Limited knowledge

**Nuclear Reactor Operator** NRC licensed operator for Reed's TRIGA Mark I research reactor.