Roie Levin

Tel Aviv University
Department of Statistics and Operations Research
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Education and Research Experience

Tel Aviv University, Department of Statistics and Operations Research
Fulbright Postdoctoral Fellow
Hosted by Prof. Niv Buchbinder.
2022 - 2024.

Carnegie Mellon University, Computer Science Department
Ph.D. in Algorithms, Combinatorics, and Optimization (ACO).
Advised by Prof. Anupam Gupta.
Research Areas: Approximation, online, and streaming algorithms, especially for submodular optimization.
2017 - 2022.

Brown University
B.S. in Applied Math/Computer Science and *B.S. in Math.*
2011 - 2015.

Publications

Refereed Papers
(∗) denotes alphabetical author order.

Competitive Algorithms for Block-Aware Caching
SPAA 2022.
(∗) Christian Coester, **Roie Levin**, Joseph (Seffi) Naor, and Ohad Talmon.

Random Order Set Cover is as Easy as Offline
FOCS 2021.
(∗) Anupam Gupta, Gregory Kehne, and **Roie Levin**.

Streaming Submodular Matching Meets the Primal-Dual Method
SODA 2021. Invited talk at Highlights of Algorithms 2021.
(∗) **Roie Levin** and David Wajc.

Fully-Dynamic Submodular Cover with Bounded Recourse
FOCS 2020.
(∗) Anupam Gupta and **Roie Levin**.

Finding Skewed Subcubes Under a Distribution
ITCS 2020.
(∗) Parikshit Gopalan, **Roie Levin**, and Udi Wieder.

The Online Submodular Cover Problem
SODA 2020.
(∗) Anupam Gupta and **Roie Levin**.

Robust Subspace Approximation in a Stream
NeurIPS 2018. Selected for spotlight presentation ($\sim 3\%$ of submitted papers).
Roie Levin, Anish Sevekari and David Woodruff.

Beyond Sentential Semantic Parsing: Tackling the Math SAT with a Cascade of Tree Transducers
EMNLP 2017.
Mark Hopkins, Cristian Petrescu-Prahova, **Roie Levin**, Ronan Le Bras, Alvaro Herrasti, and Vidur Joshi.

FigureSeer: Parsing Result-Figures in Research Papers
ECCV 2016.
Noah Siegel, Zachary Horvitz, **Roie Levin**, Santosh Kumar Divvala, and Ali Farhadi.

Unpublished

PTAS for MAP Assignment on Pairwise Markov Random Fields in Planar Graphs
arXiv 1504.01311.
Eli Fox-Epstein, **Roie Levin** and David Meierfrankenfeld.

Research Visits

University of Washington
Seattle, Washington, August 2022.

Hausdorff Research Institute for Mathematics
Trimester Program on Discrete Optimization - Bonn, Germany, Fall 2021.

Technion - Israel Institute of Technology
Host: Prof. Joseph (Seffi) Naor - Haifa, Israel, Summer 2021.

VMware Research Internship
Hosts: Dr. Parikshit Gopalan and Dr. Udi Wieder - Palo Alto, CA, Summer 2019.

Awards

Fulbright Postdoctoral Fellowship, 2022-2024.

Israel Academy of Sciences and Humanities (IASH) Excellence Fellowship Program for International Postdoctoral Researchers, 2022 (regretfully declined).

NSF Graduate Research Fellowship Program – Honorable Mention, 2019.

CMU CSD Pradeep Sindhu Fellowship, 2019.

Brown University Senior Prize in Computer Science, 2015.
Awarded for academic excellence and service to the department.

International High School of San Francisco Valedictorian, 2011.

Teaching

Carnegie Mellon University
Teaching Assistant - Undergraduate Complexity (15-455). Fall 2020.
Teaching Assistant - Graduate Algorithms (15-750). Spring 2020.
Brown University
Head Teaching Assistant - Models of Computation (CSCI 0510). Fall 2014.
Teaching Assistant - Models of Computation (CSCI 0510). Fall 2013.
Teaching Assistant - Accelerated Intro to CS (CSCI 0190). Fall 2012.
Teaching Assistant - Writing and Speaking French I (FREN 0500). Fall 2014, Spring 2015.

Service

Conference Reviews: FOCS 2021, STOC 20[21-23], SODA 2023, SOSA 2022, STACS 2023, APPROX 2021, ISIT 2021, ICALP 2021, IPCO 20[21-22], ESA 20[18-21], SWAT 2022.
Journal Reviews: Mathematical Programming, IPL, JAIR, INFORMS Journal on Computing.
Co-organized CMU Theory Lunch invited speakers series. Spring 2018 - Fall 2018.

Graduate Student Mentor. Fall 2018.

Other Positions

The Allen Institute for Artificial Intelligence
Research Engineer/Predoctoral Fellow - Project Euclid, under Prof. Mark Hopkins. August 2015 - May 2017.

Brown University
Undergraduate Research Assistant - with Prof. Paul Valiant. Summer 2014.

Menta Capital
Research Intern - Summer 2013.

Talks

Algorithms Under Uncertainty, Fulbright Post-Doctoral Seminar, December 2022.
Online Covering: Secretary and Prophet Algorithms, Tel Aviv University Algorithms Seminar, December 2022.
Competitive Algorithms for Block-Aware Caching, SPAA 2022.
Submodular Optimization Under Uncertainty, CMU, May 2022.
Random Order Set Cover is as Easy as Offline, CMU Theory Lunch, March 2022.
Random Order Set Cover is as Easy as Offline, FOCS 2021.
Random Order Set Cover is as Easy as Offline, Aalto University, Helsinki CS Theory Seminar, November 2021.
Random Order Set Cover is as Easy as Offline, HIM Trimester Program on Discrete Optimization, Workshop on Continuous Approaches to Discrete Optimization, October 2021.
Submodular Optimization Under Uncertainty, CMU, August 2021.
Streaming Submodular Matching Meets the Primal-Dual Method, HALG 2021.
Streaming Submodular Matching Meets the Primal-Dual Method, SODA 2021.
Online and Dynamic Algorithms for Submodular Cover, Google Research Algorithms Seminar, Dec 2020.
Fully-Dynamic Submodular Cover with Bounded Recourse, FOCS 2020.
Fully-Dynamic Submodular Cover with Bounded Recourse, CMU Theory Lunch, Oct 2020.
Finding Skewed Subcubes Under a Distribution, ITCS 2020.
Finding Skewed Subcubes Under a Distribution, VMWare Research, Aug 2019.

The Online Submodular Cover Problem, SODA 2020.
The Online Submodular Cover Problem, CMU Theory Lunch, Sep 2019.
The Online Submodular Cover Problem, VMWare Research, July 2019.
Robust Subspace Approximation in a Stream, Spotlight Presentation, NeurIPS 2018.

Languages

Fluent in English, Hebrew, French, and Mandarin.