

Ioana Oriana Bercea

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Education

- 2018–present **Postdoctoral Fellowship**,
TEL AVIV UNIVERSITY, Tel Aviv, Israel.
Host: Guy Even
- 2010–2018 **Ph.D. in Computer Science**,
UNIVERSITY OF MARYLAND, College Park, MD, USA.
Thesis: *Approximation Algorithms for Geometric Clustering and Touring Problems*
Advisor: Samir Khuller
- 2013 **M.Sc. in Computer Science**,
UNIVERSITY OF MARYLAND, College Park, MD, USA.
Advisor: Aravind Srinivasan
- 2006–2010 **B.Sc. in Mathematics (Honors) and B.Sc. in Computer Science**,
UNIVERSITY OF CHICAGO, Chicago, IL, USA.
Four-year scholarship

Research Interests

Data Structures in External Memory, Computational Geometry, Approximation Algorithms

Refereed Conference Proceedings (Author Order Alphabetical)

- 2019 **Ioana O. Bercea**, Martin Groß, Samir Khuller, Aounon Kumar, Clemens Rösner, Daniel R. Schmidt, Melanie Schmidt. “On the cost of essentially fair clusterings”, In: *22nd International Workshop on Approximation Algorithms for Combinatorial Optimization Problems*, (**APPROX**)
- 2018 **Ioana O. Bercea**. “Improved Bounds for the Traveling Salesman Problem with Neighborhoods on Uniform Disks”, In: *30th Canadian Conference on Computational Geometry*, (**CCCG**)
- 2016 **Ioana O. Bercea**, Volkan Isler, Samir Khuller. “Minimizing Uncertainty through Sensor Placement with Angle Constraints”, In: *28th Canadian Conference on Computational Geometry*, (**CCCG**)
- 2014 **Ioana O. Bercea**, Navin Goyal, David G. Harris, Aravind Srinivasan. “On Computing Maximal Independent Sets of Hypergraphs in Parallel”, In: *26th ACM Symposium on Parallelism in Algorithms and Architectures*, (**SPAA**)

Journal Articles

- 2016 **Ioana O. Bercea**, Navin Goyal, David G. Harris, Aravind Srinivasan. "On Computing Maximal Independent Sets of Hypergraphs in Parallel", In: *ACM Transactions on Parallel Computing*, Special issue on SPAA 2014

Submitted Conference Articles

- 2019 **Ioana O. Bercea**, Guy Even. "Fully-Dynamic Space-Efficient Dictionaries and Filters with Constant Number of Memory Accesses"

Work in Progress/Manuscripts

- 2019 **Ioana O. Bercea**, Tobias Mömke. "Polynomial Time Algorithms for Euclidean Maximum TSP and Maximum Scatter TSP"
- 2019 Saba Ahmadi, **Ioana O. Bercea**, Samir Khuller, Sheng Yang. "Counting Small Cliques and Four Node Subgraphs in Bounded Degeneracy Graphs"
- 2019 **Ioana O. Bercea**, David Harris. "New Approximations for the Graph Vertex Pricing Problem"

Long-term Research Visits

- Spring 2018 **Research Program**, CENTRE DE RECERCA MATEMATICA, Barcelona, Spain, *Intensive Research Program in Discrete, Combinatorial and Computational Geometry*
- Summer 2017 **Research Internship**, MAX PLANCK INSTITUTE FOR INFORMATICS, Saarbrücken, Germany, w. Tobias Mömke
- Summer 2016 **Research Internship**, MAX PLANCK INSTITUTE FOR INFORMATICS, Saarbrücken, Germany, w. Parinya Chalermsook
- Summer 2012 **Research Internship**, MICROSOFT RESEARCH INDIA, Bangalore, India, w. Navin Goyal

Invited Workshops

- Oct. 2019 IGAFIT: *Workshop for Postdoctoral Researchers in Algorithms*
- Sept. 2019 GI-DAGSTUHL SEMINAR: *Algorithms for Big Data*
- March 2019 DAGSTUHL SEMINAR: *Theoretical Foundations of Storage Systems*
- Jan. 2019 DAGSTUHL SEMINAR: *Data Structures for the Cloud and External Memory Data*
- Oct. 2018 *7th French-Israeli Workshop on Foundations of Computer Science*

Talks

The Descent of Cuckoos, and Selection in Relation to Nests

- July 2019 WORKSHOP ON LOCAL ALGORITHMS (WOLA)
- June 2019 HIGHLIGHTS OF ALGORITHMS (HALG)
- June 2019 19TH CRI HAIFA GRAPH WORKSHOP
- May 2019 ISRAELI NETWORKING DAY

- March 2019 MAX PLANCK INSTITUTE FOR INFORMATICS, Theory Seminar
 Jan. 2019 DAGSTUHL SEMINAR: *Data Structures for the Cloud and External Memory Data*
Improved Bounds for the Traveling Salesman Problem with Neighborhoods on Uniform Disks
 Nov. 2018 TEL AVIV UNIVERSITY, Computational Geometry Seminar
 Oct. 2018 *7th French-Israeli Workshop on Foundations of Computer Science*
 April 2018 CENTRA DE RECERCA MATEMATICA, IRP Program

Teaching

- Spring 2016 **Co-Instructor for CMSC 122: Intro to Computer Programming via the Web**, UNIVERSITY OF MARYLAND, Department of Computer Science.
- 2010–2018 **Graduate Teaching Assistant**, UNIVERSITY OF MARYLAND, Department of Computer Science.
 D = Leading discussion sections, presenting new material, reviewing, quizzes, grading, office hours; G = Grading and office hours
CMSC 250: Discrete Structures,
 Fall 2011(D), Spring 2014(D), Spring 2015(D), Fall 2015(D), Fall 2016(D), Spring 2017(G).
CMSC 131/132: Object Oriented Programming I, II,
 Fall 2010 (D), Fall 2013(D), Spring 2018(G).
CMSC 216: Introduction to Computer Systems,
 Spring 2011(G), Summer 2011(D).
CMSC 350: Algorithms,
 Spring 2012(G).
CMSC 122: Intro to Computer Programming via the Web,
 Fall 2017(G).
- 2009–2010 **Junior Tutor for Elementary Functions and Analysis 1,2,3**, UNIVERSITY OF CHICAGO, Mathematics Department.

Honors and Awards

- 2014–2015 **Outstanding Graduate Assistant Award**, UNIVERSITY OF MARYLAND.
 Top 2% of all UMD Graduate Assistants
- 2010–2012 **Dean's Fellowship**, UNIVERSITY OF MARYLAND.
- 2006–2008, **Dean's List**, UNIVERSITY OF CHICAGO.
- 2009–2010 Awarded to students with GPA > 3.25
- 2006–2010 **Scholarship**, UNIVERSITY OF CHICAGO.
 Tuition, housing and stipend (unconditioned on GPA)
- 2001–2006 **Romanian National Mathematics Olympiad**.
 Bronze medals in the National Olympiad, Top 3 prizes in national and regional contests

Service

- 2019 **Program Committee**, ICDCN 2020.
- 2019 **Journal Reviewer**, *Theoretical Computer Science*.
- 2017–present **Conference Reviewer**, SPAA 2017, FC 2018, SoCG 2018, SODA 2020, STACS 2020.
- 2017 **Journal Reviewer**, *Networks, ACM Transactions on Sensor Networks*.
- 2015–2016 **Graduate Student Representative**,
UNIVERSITY OF MARYLAND, Computer Science Department Council.
- 2012–2014 **Graduate Student Representative**,
UNIVERSITY OF MARYLAND, Computer Science Department Education Committee.