

# Curriculum Vitae

Omrit Filtser

December 2020

## Personal Details

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**Website:** omrit.filtser.com

**Date of Birth:** 24.12.1987

**Marital status:** Married, two children.

## Education and Research Experience

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- 2019-now:** Postdoc at Stony Brook University, hosted by Prof. Joseph S.B. Mitchell.
- 2014-2019:** PhD student in Computer Science, Ben-Gurion University of the Negev.  
Advisor: Matthew J. Katz. Title: The Discrete Fréchet Distance and Applications.
- 2012-2014:** MSc in Computer Science, Ben-Gurion University of the Negev.  
Advisor: Matthew J. Katz. Title: The Discrete Fréchet Distance and Applications.  
Graduated Summa cum Laude (final score 97.9/100).
- 2009-2012:** BSc in Computer Science, Ben-Gurion University of the Negev.  
Graduated Summa cum Laude (average 95.65/100).  
During Bachelor's:
- **2009-2012:** Participated in the excellence program of Microsoft Israel, which includes unique technological courses in the forefront of research in the R&D center.
  - **2012:** Participated in "Dkalim" scholarship program for outstanding students applying to Master studies in computer science. As part of the program I participated in research seminars and worked in collaboration with researchers from the university.

## Honors and Awards

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- The Israeli Council for Higher Education fellowship for postdoctoral women fellows, 2019.
- BGU scholarship for postdoctoral women fellows abroad, 2019.
- Eric and Wendy Schmidt Postdoctoral Award for Women in Mathematical and Computing Sciences, 2019-2020.
- Philippe Chaim Zabey Award for excellent Master Thesis, 2017.
- The Israeli Ministry of Science & Technology Scholarship for women in science (PhD students), 2015.
- Friedman Award for outstanding achievements in research, 2015.
- Dean's honor for excellent graduate students, 2015.
- Negev Scholarship for excellence in research, 2014.
- The Israeli Ministry of Science & Technology Scholarship for women in science (Master students), 2013.
- Martha and Solomon Scharf prize for excellent undergraduate, the elite scouting unit for Hi-Tech studies, 2010, 2011, 2012.
- Intel Award, 2012.
- Dean's honors for undergraduate students, 2011, 2012.
- Department's honors, 2010, 2011, 2012.

## Teaching and Work Experience

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<b>2006-2009:</b>	Programmer in the Israeli Defense Force.
<b>2013:</b>	Teaching: Automata and Formal Languages. Grading: Discrete Structures and Combinatorics.
<b>2014:</b>	Grading: Automata and Formal Languages. Grading: Discrete Structures and Combinatorics.
<b>2015-2019:</b>	Grading: Computational Geometry. Teaching: Data Structures.

## Publications

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(The authors are listed in alphabetical order)

### Scientific Journals:

- **Algorithms for the discrete Fréchet distance under translation.**  
Omrit Filtser and Matthew J. Katz.  
*Journal of Computational Geometry (JoCG)*, 2020.
- **Universal approximate simplification under the discrete Fréchet distance.**  
Omrit Filtser.  
*Information Processing Letters (IPL)*, 2018.
- **Guarding orthogonal art galleries with sliding cameras.**  
Stephane Durocher, Omrit Filtser, Robert Fraser, Ali D. Mehrabi, Saeed Mehrabi.  
*Computational Geometry: Theory and Applications (CGTA)*, 2017.
- **The Discrete and Semicontinuous Fréchet Distance with Shortcuts via Approximate Distance Counting and Selection.**  
Rinat Ben Avraham, Omrit Filtser, Haim Kaplan, Matthew J. Katz, Micha Sharir.  
*ACM Transactions on Algorithms (TALG)*, 2015.

### Refereed Conferences - Published:

- **Plurality in Spatial Voting Games with constant  $\beta$ .**  
Arnold Filtser and Omrit Filtser.  
To appear in the *AAAI Conference on Artificial Intelligence*, 2021.
- **Static and Streaming Data Structures for Fréchet Distance Queries.**  
Arnold Filtser and Omrit Filtser.  
To appear in the *ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2021.
- **Approximate Nearest Neighbor for Curves --- Simple, Efficient, and Deterministic.**  
Arnold Filtser, Omrit Filtser and Matthew J. Katz.  
*International Colloquium on Automata, Languages, and Programming (ICALP)*, 2020.
- **A Constant-Factor Approximation Algorithm for Vertex Guarding a WV-Polygon.**  
Stav Ashur, Omrit Filtser, and Matthew J. Katz.  
*International Workshop on Approximation and Online Algorithms (WAOA)*, 2020.
- **Terrain-Like Graphs: PTASs for Guarding Weakly-Visible Polygons and Terrains.**  
Stav Ashur, Omrit Filtser, Matthew J. Katz, and Rachel Saban.  
*International Workshop on Approximation and Online Algorithms (WAOA)*, 2019.
- **Efficient Nearest Neighbor Query and Clustering of Planar Curves.**  
Boris Aronov, Omrit Filtser, Michael Horton, Matthew J. Katz, and Khadijeh Sheikhan.  
*Algorithms and Data Structures Symposium (WADS)*, 2019.
- **Bipartite diameter and other measures under translation.**  
Boris Aronov, Omrit Filtser, Matthew J. Katz, and Khadijeh Sheikhan.  
*Symposium on Theoretical Aspects of Computer Science (STACS)*, 2019.

- **Algorithms for the discrete Fréchet distance under translation.**  
Omrit Filtser and Matthew J. Katz.  
*Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), 2018.*
- **On the General Chain Pair Simplification Problem.**  
Chenglin Fan, Omrit Filtser, Matthew J. Katz, and Binhai Zhu.  
*International Symposium on Mathematical Foundations of Computer Science (MFCS) 2016.*
- **On the Chain Pair Simplification Problem.**  
Chenglin Fan, Omrit Filtser, Matthew J. Katz, Tim Wylie, and Binhai Zhu.  
*Algorithms and Data Structures Symposium (WADS) 2015.*
- **The Discrete Fréchet Distance with Shortcuts via Approximate Distance Counting and Selection Techniques.**  
Rinat Ben Avraham, Omrit Filtser, Haim Kaplan, Matthew J. Katz, and Micha Sharir.  
*Symposium on Computational Geometry (SoCG) 2014.*
- **A (7/2)-Approximation Algorithm for Guarding Orthogonal Art Galleries with Sliding Cameras.**  
Stephane Durocher, Omrit Filtser, Robert Fraser, Ali Mehrabi, and Saeed Mehrabi.  
*Latin American Theoretical INformatics Symposium (LATIN) 2014.*
- **Simple Rectilinear Polygons are Perfect under Rectangular Vision.**  
Esther Arkin, Michael Biro, Omrit Filtser, Matthew J. Katz, Joseph S.B. Mitchell, and Christiane Schmidt.  
*Fall Workshop on Computational Geometry, 2013.*

#### Refereed Conferences and Journals - Submitted:

- **How to Stay Socially Distant: A Geometric Approach.**  
Omrit Filtser, Mayank Goswami, Joseph S. B. Mitchell, and Valentin Polishchuk.  
Submitted to the *Symposium on Computational Geometry (SoCG) 2021.*
- **A Constant-Factor Approximation Algorithm for Vertex Guarding a WV-Polygon.**  
Stav Ashur, Omrit Filtser, and Matthew J. Katz.  
Submitted to the *Journal on Computational Geometry (JoCG).*
- **Bipartite diameter and other measures under translation.**  
Boris Aronov, Omrit Filtser, Matthew J. Katz, and Khadijeh Sheikhan.  
Submitted to the *journal on Discrete & Computational Geometry (DCG).*
- **A Tour of General Hanoi Graphs.**  
Daniel Berend, Liat Cohen and Omrit Filtser. (in preparation)

#### Presentations in conferences and invited talks:

- **Static and Streaming Data Structures for Fréchet Distance Queries:**
  - *Computer science colloquium, Ben Gurion University, 24.11.20.*
  - *Future talk: Computational Geometry Seminar, Tel-Aviv University, 9.12.20.*
- **Approximate Nearest Neighbor for Curves --- Simple, Efficient, and Deterministic:**
  - *International Colloquium on Automata, Languages, and Programming, 8.7.20.*
- **Similarity Under Translation:**
  - *Algorithms Seminar, Stony Brook University (NY), 29.1.20.*
- **The Discrete Fréchet Distance and Applications:**
  - *PhD talk, Computer science colloquium, Ben Gurion University, 26.3.19.*
  - *Computer Science seminar, Holon Institute of Technology, 28.4.19.*
- **Bipartite diameter and other measures under translation:**
  - *Symposium on Theoretical Aspects of Computer Science, 14.3.19.*
- **Algorithms for the discrete Fréchet distance under translation:**
  - *Computational Geometry Seminar, Tel Aviv University, 27.12.17.*
  - *Scandinavian Symposium and Workshops on Algorithm Theory, 18.6.18 .*

- **The Discrete Fréchet Gap:**
  - *Young Researcher Workshop on Automata, Languages and Programming (Satellite Workshop of ICALP), 5.7.15.*
  - *Research Seminar in Discrete and Computational Geometry, Ben-Gurion University, 11.11.15.*
- **The Discrete Fréchet Distance with Shortcuts:**
  - *Research Seminar in Discrete and Computational Geometry, Ben-Gurion University, 2.12.13.*