Wolfgang Johann Heinrich Mulzer

CONTACT INFORMATION

Institut für Informatik
Freie Universität Berlin
Takustraße 9
14195 Berlin, Germany

Voice: +49 30 838 75165
Fax: +49 30 838 475165
WWW: `http://page.mi.fu-berlin.de/mulzer`
E-Mail: `mulzer@inf.fu-berlin.de`

CITIZENSHIP

Germany

RESEARCH INTERESTS

- Computational geometry
- Data structures
- Low-entropy input models
- Optimal triangulations

Most of my work is in the field of computational geometry, where I explore how additional structure in the inputs can be exploited to find faster algorithms for classical problems, like Delaunay triangulation and convex hull computation. Such additional structure may come in the form of bounded precision, information about the likely location of the input points, or the fact that the input points are sampled from a low-entropy distribution or come from a relatively small set of candidates.
In earlier work, I considered triangulations, and helped settle the complexity status of the notorious minimum weight triangulation problem by showing that it is NP-hard.

EMPLOYMENT

Freie Universität Berlin, Berlin, Germany

Parental Leave, May 2021–October 2021

Professor, Computer Science, since October 2016

Juniorprofessor, Computer Science, November 2010–September 2016

Visiting Professor, Computer Science, October 2010

EDUCATION

Princeton University, Princeton, NJ, USA

PhD, Computer Science (2005 – 2010)

- Advisor: Prof. Dr. Bernard Chazelle
- Thesis topic: *Low-Entropy Computational Geometry*
- Degree conferred in June 2010

MA., Computer Science, September 2007

Freie Universität Berlin, Berlin, Germany

Research Assistant, Computer Science (2004 – 2005)

- Advisor: Prof. Dr. Günter Rote
- Research topic: *Optimal Triangulations*

Diplom, Computer Science (2000 – 2004)

- Advisor: Prof. Dr. Christian Knauer
- Thesis topic: *Minimum Dilation Triangulations for the Regular n-gon*
- Degree conferred in November 2004

HONORS

Co-winner of the Alejandro López-Ortiz best paper award at LATIN 2018 for *Time-Space Trade-Offs for Computing Euclidean Minimum Spanning Trees* (joint work with Luis Barba and Bahareh Banyassady), April 2018

Recipient of a starting grant from the European Research Council (ERC), September 2017

Participated in the first Heidelberg Laureate Forum, September 2013

Wallace Memorial Fellowship in Engineering
- Princeton University Honorific fellowship (2009 – 2010)

Studienstiftung des deutschen Volkes (German Academic Foundation)
- Scholarship (2003 – 2004)

Fulbright Travel Grant
- Exchange scholarship to Princeton University (2003 – 2004)

Freie Universität Berlin Exchange Scholarship
- Exchange scholarship to Princeton University (2003 – 2004)

Surveys

Geometric Algorithms with Limited Workspace
B. Banyassady, M. Korman, and W. Mulzer
ACM SIGACT News, 49(2), June 2018, pp. 77–94.

Five Proofs of Chernoff's Bound with Applications
W. Mulzer
Bulletin of the EATCS (BEATCS), 124, February 2018.

Proximity Algorithms
J. S. Mitchell and W. Mulzer
In: Jacob E. Goodman, Joseph O'Rourke, and Csaba D. Tóth (editors), Handbook of Discrete and Computational Geometry, Third Edition, Chapter 32, 2017, pp. 849–874.

Encoding Arguments
P. Morin, W. Mulzer, and T. Reddad
ACM Computing Surveys (CSUR), 50(3), July 2017, Article 46.

Journal Publications

Maintaining the Union of Unit Discs under Insertions with Near-Optimal Overhead
P. K. Agarwal, R. Cohen, D. Halperin, and W. Mulzer
ACM Transactions on Algorithms (TALG), to appear.

No-dimensional Tverberg Theorems and Algorithms
A. Choudhary and W. Mulzer
Discrete and Computational Geometry (DCG), to appear.
Special Issue on SoCG 2020.

On the Stretch Factor of Polygonal Chains
K. Chen, A. Dumitrescu, W. Mulzer, and C. D. Tóth
SIAM Journal on Discrete Mathematics (SIDMA), 35(3), 2021, pp. 1592–1614.

Stabbing Pairwise Intersecting Disks by Five Points
S. Har-Peled, H. Kaplan, W. Mulzer, L. Roditty, P. Seiferth, M. Sharir, and M. Willert
Discrete Mathematics (DM), 334(7), 2021, Article 112403.

Minimum Cuts in Geometric Intersection Graphs
S. Cabello and W. Mulzer
Computational Geometry: Theory and Applications (CGTA), 94, 2021, Article 101720.

Time-Space Trade-Offs for Computing Euclidean Minimum Spanning Trees
B. Banyassady, L. Barba, and W. Mulzer
Journal of Computational Geometry (JoCG), 11(1), 2020, pp. 525–547.

A Simple Randomized $O(n \log n)$-Time Closest-Pair Algorithm in Doubling Metrics
A. Maheshwari, W. Mulzer, and M. Smid
Journal of Computational Geometry (JoCG), 11(1), 2020, pp. 507–524.

Minimal Representations of Order Types by Geometric Graphs
O. Aichholzer, M. Balko, M. Hoffmann, J. Kynčl, W. Mulzer, I. Parada, A. Pilz, M. Scheucher, P. Valtr, B. Vogtenhuber, and E. Welzl
Journal of Graph Algorithms and Applications (JGAA), 24(4), 2020, pp. 551–572.
Special issue on GD 2019.

Dynamic Planar Voronoi Diagrams for General Distance Functions and their Algorithmic Applications
H. Kaplan, W. Mulzer, L. Roditty, P. Seiferth, and M. Sharir
Discrete and Computational Geometry (DCG), 64(3), October 2020, pp. 838–904.
Special issue in memory of Ricky Pollack.

Combinatorics of Beacon-based Routing in Three Dimensions
J. Cleve and W. Mulzer
Computational Geometry: Theory and Applications (CGTA), 91, 2020, Article 101667.

Reachability Oracles for Directed Transmission Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Algorithmica, 82, 2020, pp. 1259–1276.

A Constructive Proof of a Concentration Bound for Real-Valued Random Variables
W. Mulzer and N. Shenkman
Information Processing Letters (IPL), 158, 2020, Article 105942.

Routing in Polygonal Domains
B. Banyassady, M. Chiu, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, Y. Stein, B. Vogtenhuber, and M. Willert
Computational Geometry: Theory and Applications (CGTA), 87, 2020, Article 101593.
Special issue on EWCG 2017.

A Time-Space Trade-off for Computing the k-Visibility Region of a Point in a Polygon
Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, and W. Mulzer
Theoretical Computer Science (TCS), 789, 2019, pp. 13–21.
Special issue on WALCOM 2017.

Faster Algorithms for Growing Prioritized Disks and Rectangles
H. Ahn, S. W. Bae, J. Choi, M. Korman, W. Mulzer, E. Oh, J. Park, A. van Renssen, and A. Vigneron
Computational Geometry: Theory and Applications (CGTA), 80, 2019, pp. 23–39.

Computational Aspects of the Colorful Carathéodory Theorem
W. Mulzer and Y. Stein
Discrete and Computational Geometry (DCG), 60(3), October 2018, pp. 720–755.

Spanners for Directed Transmission Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
SIAM Journal on Computing (SICOMP), 47(4), 2018, pp. 1585–1609.

Time-Space Trade-offs for Triangulations and Voronoi Diagrams
M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, and Y. Stein
Computational Geometry: Theory and Applications (CGTA), 73, 2018, pp. 35–45.
Special issue on EWCG 2015.

Improved Time-Space Trade-offs for Computing Voronoi Diagrams
B. Banyassady, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, and Y. Stein
Journal of Computational Geometry (JoCG), 9(1), 2018, pp. 191–212.

Routing in Unit Disk Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Algorithmica, 80(3), 2018, pp. 830–848.
Special issue on LATIN 2016.

The Dual Diameter of Triangulations
M. Korman, S. Langerman, W. Mulzer, A. Pilz, M. Saumell, and B. Vogtenhuber
Computational Geometry: Theory and Applications (CGTA), 68, 2018, pp. 243–252.
Special issue in memory of Ferran Hurtado.

An Optimal Algorithm for Reconstructing Point Set Order Types from Radial Orderings
O. Aichholzer, V. Kusters, W. Mulzer, A. Pilz, and M. Wettstein
International Journal of Computational Geometry and Applications (IJCGA), 27(1n2), 2017, pp. 57–83.
Special issue on ISAAC 2015.

Four Soviets Walk the Dog: Improved Bounds for Computing the Fréchet Distance
K. Buchin, M. Buchin, W. Meulemans, and W. Mulzer
Discrete and Computational Geometry (DCG), 58(1), July 2017, pp. 180–216.

Computing the Fréchet Distance with a Retractable Leash
K. Buchin, M. Buchin, R. van Leusden, W. Meulemans, and W. Mulzer
Discrete and Computational Geometry (DCG), 56(2), September 2016, pp. 315–336.

Approximability of the Discrete Fréchet Distance
K. Bringmann and W. Mulzer
Journal of Computational Geometry (JoCG), 7(2), 2016, pp. 46–76.
Special issue on SoCG 2015.

Flip Distance Between Triangulations of a Simple Polygon is NP-Complete
O. Aichholzer, W. Mulzer, and A. Pilz
Discrete and Computational Geometry (DCG), 54(2), September 2015, pp. 368–389.

Data Structures on Event Graphs
B. Chazelle and W. Mulzer
Algorithmica, 71(4), 2015, pp. 1007–1020.

Algorithms for Tolerant Tverberg Partitions
W. Mulzer and Y. Stein
International Journal of Computational Geometry and Applications (IJCGA), 24(4),

2014, pp. 261–273.
Special issue on ISAAC 2013.

Reprint of: Memory-Constrained Algorithms for Simple Polygons
T. Asano, K. Buchin, M. Buchin, M. Korman, W. Mulzer, G. Rote, and A. Schulz
Computational Geometry: Theory and Applications (CGTA), 47(3), 2014, pp. 469–479.
Special issue on EWCG 2012.

Self-Improving Algorithms for Coordinate-Wise Maxima and Convex Hulls
K. L. Clarkson, W. Mulzer, and C. Seshadhri
SIAM Journal on Computing (SICOMP), 43(2), 2014, pp. 617–653.

Unions of Onions: Preprocessing Imprecise Points for Fast Onion Decomposition
M. Löffler and W. Mulzer
Journal of Computational Geometry (JoCG), 5(1), 2014, pp. 1–13.

Approximating Tverberg Points in Linear Time for Any Fixed Dimension
W. Mulzer and D. Werner
Discrete and Computational Geometry (DCG), 50(2), September 2013, pp. 520–535.

Memory-Constrained Algorithms for Simple Polygons
T. Asano, K. Buchin, M. Buchin, M. Korman, W. Mulzer, G. Rote, and A. Schulz
Computational Geometry: Theory and Applications (CGTA), 46(8), 2013, pp. 959–969.
Special issue on EWCG 2012.

Convex Hull of Points Lying on Lines in $o(n \log n)$ Time after Preprocessing
E. Ezra and W. Mulzer
Computational Geometry: Theory and Applications (CGTA), 46(4), 2013, pp. 417–434.
Special issue on SoCG 2011.

A Static Optimality Transformation with Applications to Planar Point Location
J. Iacono and W. Mulzer
International Journal of Computational Geometry and Applications (IJCGA), 22(4), 2012, pp. 327–340.
Special issue on SoCG 2011.

Triangulating the Square and Squaring the Triangle: Quadtrees and Delaunay Triangulations are Equivalent
M. Löffler and W. Mulzer
SIAM Journal on Computing (SICOMP), 41(4), 2012, pp. 941–974.

Constant-Work-Space Algorithms for Shortest Paths in Trees and Simple Polygons
T. Asano, W. Mulzer, and Y. Wang
Journal of Graph Algorithms and Applications (JGAA), 15(5), 2011, pp. 569–586.
Special issue on WALCOM 2010.

Preprocessing Imprecise Points for Delaunay Triangulations: Simplified and Extended
K. Buchin, M. Löffler, P. Morin, and W. Mulzer
Algorithmica, 61(3), 2011, pp. 674–693.

Constant-Work-Space Algorithms for Geometric Problems
T. Asano, W. Mulzer, G. Rote, and Y. Wang
Journal of Computational Geometry (JoCG), 2(1), 2011, pp. 46–68.

Computing Hereditary Convex Structures
B. Chazelle and W. Mulzer
Discrete and Computational Geometry (DCG), 45(4), June 2011, pp. 796–823.
Special Issue on SoCG 2009.

Delaunay Triangulations in $O(\texttt{sort}(n))$ Time and More
K. Buchin and W. Mulzer
Journal of the Association for Computing Machinery (JACM), 58(2), April 2011, Article 6.

Self-Improving Algorithms
N. Ailon, B. Chazelle, K. L. Clarkson, D. Liu, W. Mulzer, and C. Seshadhri
SIAM Journal on Computing (SICOMP), 40(2), 2011, pp. 350–375.

Markov Incremental Constructions
B. Chazelle and W. Mulzer
Discrete and Computational Geometry (DCG), 42(3), October 2009, pp. 399–420.
Special Issue on SoCG 2008.

A Note on Predecessor Searching in the Pointer Machine Model
W. Mulzer
Information Processing Letters (IPL), 109(13), 2009, pp. 726–729.

Minimum Weight Triangulation is NP-hard
W. Mulzer and G. Rote
Journal of the Association for Computing Machinery (JACM), 55(2), May 2008, Article 11.

Refereed Conferences

Compatible Spanning Trees in Simple Drawings of K_n
O. Aichholzer, K. Knorr, W. Mulzer, N. El Maalouly, J. Obenaus, R. Paul, M. Mallik Reddy, B. Vogtenhuber, and A. Weinberger
Proceedings of the 30th International Symposium on Graph Drawing and Network Visualization (GD), Tokyo, Japan, 2022, to appear.

Well-Separation and Hyperplane Transversals in High Dimensions
H. Bergold, D. Bertschinger, N. Grelier, W. Mulzer, and P. Schnider
Proceedings of the 18th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), Tórshavn, Faroe Islands, pp. 16:1–16:14.

Nearest-Neighbor Decompositions of Drawings
J. Cleve, N. Grelier, K. Knorr, M. Löffler, W. Mulzer, and D. Perz
Proceedings of the 18th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), Tórshavn, Faroe Islands, pp. 21:1–21:16.

Long Plane Trees
S. Cabello, M. Hoffmann, K. Klost, W. Mulzer, and J. Tkadlec
Proceedings of the 38th International Symposium on Computational Geometry (SoCG), Berlin, Germany, 2022, pp. 23:1–23:17.

Dynamic Connectivity in Disk Graphs
H. Kaplan, A. Kauer, K. Klost, K. Knorr, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 38th International Symposium on Computational Geometry (SoCG), Berlin, Germany, 2022, pp. 49:1–49:17.
Invited to the special issue on SoCG 2022 (DCG).

Compact Routing in Unit Disk Graphs
W. Mulzer and M. Willert
Proceedings of the 31st International Symposium on Algorithms and Computation (ISAAC), Hong Kong, 2020, pp. 16:1–16:14.

Computational Complexity of the Alpha-Ham-Sandwich Problem
M. Chiu, A. Choudhary, and W. Mulzer
Proceedings of the 47th International Colloquium on Automata, Languages and Programming (ICALP), Saarbrücken, Germany, 2020, pp. 31:1–31:18.

No-dimensional Tverberg Theorems and Algorithms
A. Choudhary and W. Mulzer
Proceedings of the 36th International Symposium on Computational Geometry (SoCG), Zürich, Switzerland, 2020, pp. 31:1–31:17.
Invited to the special issue on SoCG 2020 (DCG).

Long Alternating Paths Exist
W. Mulzer and P. Valtr
Proceedings of the 36th International Symposium on Computational Geometry (SoCG), Zürich, Switzerland, 2020, pp. 57:1–57:16.

Maximum Matchings in Geometric Intersection Graphs
É. Bonnet, S. Cabello, and W. Mulzer
Proceedings of the 37th International Symposium on Theoretical Aspects of Computer Science (STACS), Montpellier, France, 2020, pp. 31:1–31:17.

Routing in Histograms
M. Chiu, J. Cleve, K. Klost, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, and M. Willert
Proceedings of the 14th International Conference and Workshops on Algorithms and Computation (WALCOM), Singapore, 2020, pp. 43–54.

Minimal Representations of Order Types by Geometric Graphs
O. Aichholzer, M. Balko, M. Hoffmann, J. Kynčl, W. Mulzer, I. Parada, A. Pilz, M. Scheucher, P. Valtr, B. Vogtenhuber, and E. Welzl
Proceedings of the 27th International Symposium on Graph Drawing and Network Visualization (GD), Průhonice/Prague, Czech Republic, 2019, pp. 101–113.
Invited to the special issue on GD 2019 (JGAA).

Triangles and Girth in Disk Graphs and Transmission Graphs
H. Kaplan, K. Klost, W. Mulzer, L. Roditty, P. Seiferth, and M. Sharir
Proceedings of the 27th Annual European Symposium on Algorithms (ESA), Munich/Garching, Germany, 2019, pp. 64:1–64:14.

On the Stretch Factor of Polygonal Chains
K. Chen, A. Dumitrescu, W. Mulzer, and C. D. Tóth
Proceedings of the 44th International Symposium on Mathematical Foundations of Computer Science (MFCS), Aachen, Germany, 2019, pp. 56:1–56:14.

An Experimental Study of Algorithms for Geodesic Shortest Paths in the Constant Workspace Model
J. Cleve and W. Mulzer
Proceedings of the Special Event on Analysis of Experimental Algorithms (SEA2), Kalmata, Greece, 2019, pp. 317–331.

Maintaining the Union of Unit Discs under Insertions with Near-Optimal Overhead

P. K. Agarwal, R. Cohen, D. Halperin, and W. Mulzer
Proceedings of the 35th International Symposium on Computational Geometry (SoCG), Portland, USA, 2019, pp. 26:1–26:15.

Asymmetric Convex Intersection Testing
L. Barba and W. Mulzer
Proceedings of the 2nd Symposium on Simplicity in Algorithms (SOSA), San Diego, USA, 2019, pp. 9:1–9:14.

Approximate Minimum-Weight Matching with Outliers under Translation
P. K. Agarwal, H. Kaplan, G. Kipper, W. Mulzer, G. Rote, M. Sharir, and A. Xiao
Proceedings of the 29th International Symposium on Algorithms and Computation (ISAAC), Jaoxi, Taiwan, 2018, pp. 26:1–26:13.

Stabbing Pairwise Intersecting Disks by Five Points
S. Har-Peled, H. Kaplan, W. Mulzer, L. Roditty, P. Seiferth, M. Sharir, and M. Willert
Proceedings of the 29th International Symposium on Algorithms and Computation (ISAAC), Jiaoxi, Taiwan, 2018, pp. 50:1–50:12.

Time-Space Trade-Offs for Computing Euclidean Minimum Spanning Trees
B. Banyassady, L. Barba, and W. Mulzer
Proceedings of the 13th Latin American Theoretical Informatics Symposium (LATIN), Buenos Aires, Argentina, 2018, pp. 108–119.
Co-winner of the Alejandro López-Ortiz best paper award.

Combinatorics of Beacon-based Routing in Three Dimensions
J. Cleve and W. Mulzer
Proceedings of the 13th Latin American Theoretical Informatics Symposium (LATIN), Buenos Aires, Argentina, 2018, pp. 346–360.

Recognizing Generalized Transmission Graphs of Line Segments and Circular Sectors
K. Klost and W. Mulzer
Proceedings of the 13th Latin American Theoretical Informatics Symposium (LATIN), Buenos Aires, Argentina, 2018, pp. 683–696.

Faster Algorithms for Growing Prioritized Disks and Rectangles
H. Ahn, S. W. Bae, J. Choi, M. Korman, W. Mulzer, E. Oh, J. Park, A. van Renssen, and A. Vigneron
Proceedings of the 28th International Symposium on Algorithms and Computation (ISAAC), Phuket, Thailand, 2017, pp. 3:1–3:13.
Invited to the special issue on ISAAC 2017 (IJCGA).

Routing in Polygonal Domains
B. Banyassady, M. Chiu, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, Y. Stein, B. Vogtenhuber, and M. Willert
Proceedings of the 28th International Symposium on Algorithms and Computation (ISAAC), Phuket, Thailand, 2017, pp. 10:1–10:13.
Invited to the special issue on ISAAC 2017 (IJCGA).

Delta-Fast Tries: Local Searches in Bounded Universes with Linear Space
M. Ehrhardt and W. Mulzer
Proceedings of the 15th Algorithms and Data Structures Symposium (WADS), St John's, Canada, 2017, pp. 361–372.

Time-Space Trade-off for Finding the k-Visibility Region of a Point in a Polygon
Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, and W. Mulzer
Proceedings of the 11th International Conference and Workshops on Algorithms and Computation (WALCOM), Hsinchu, Taiwan, 2017, pp. 308–319.
Invited to the special issue on WALCOM 2017 (TCS).

Improved Time-Space Trade-offs for Computing Voronoi Diagrams
B. Banyassady, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, and Y. Stein
Proceedings of the 34th International Symposium on Theoretical Aspects of Computer Science (STACS), Hannover, Germany, 2017, pp. 9:1–9:14.

The Rainbow at the End of the Line – A PPAD Formulation of the Colorful Carathéodory Theorem with Applications
F. Meunier, W. Mulzer, P. Sarrabezolles, and Y. Stein
Proceedings of the 28th ACM-SIAM Symposium on Discrete Algorithms (SODA), Barcelona, Spain, 2017, pp. 1342–1351.

Dynamic Planar Voronoi Diagrams for General Distance Functions and their Algorithmic Applications
H. Kaplan, W. Mulzer, L. Roditty, P. Seiferth, and M. Sharir
Proceedings of the 28th ACM-SIAM Symposium on Discrete Algorithms (SODA), Barcelona, Spain, 2017, pp. 2495–2504.

Routing in Unit Disk Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 12th Latin American Theoretical Informatics Symposium (LATIN), Ensenada, México, 2016, pp. 536–548.
Invited to the special issue on LATIN 2016 (Algorithmica).

An Optimal Algorithm for Reconstructing Point Set Order Types from Radial Orderings
O. Aichholzer, V. Kusters, W. Mulzer, A. Pilz, and M. Wettstein
Proceedings of the 26th International Symposium on Algorithms and Computation (ISAAC), Nagoya, Japan, 2015, pp. 505–516.
Invited to the special issue on ISAAC 2015 (IJCGA).

Time-Space Trade-offs for Triangulations and Voronoi Diagrams
M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, and Y. Stein
Proceedings of the 14th Algorithms and Data Structures Symposium (WADS), Victoria, Canada, 2015, pp. 482–494.

Approximability of the Discrete Fréchet Distance
K. Bringmann and W. Mulzer
Proceedings of the 31st International Symposium on Computational Geometry (SoCG), Eindhoven, The Netherlands, 2015, pp. 739–753.
Invited to the special issue on SoCG 2015 (JoCG).

Spanners and Reachability Oracles for Directed Transmission Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 31st International Symposium on Computational Geometry (SoCG), Eindhoven, The Netherlands, 2015, pp. 156–170.

Computational Aspects of the Colorful Carathéodory Theorem
W. Mulzer and Y. Stein
Proceedings of the 31st International Symposium on Computational Geometry (SoCG), Eindhoven, The Netherlands, 2015, pp. 44–58.

Approximate k-flat Nearest Neighbor Search
W. Mulzer, H. L. Nguyễn, P. Seiferth, and Y. Stein
Proceedings of the 47th Annual Symposium on the Theory of Computing (STOC), Portland, USA, 2015, pp. 783–792.

Interference Minimization in Asymmetric Sensor Networks
Y. Brise, K. Buchin, D. Eversmann, M. Hoffmann, and W. Mulzer
Proceedings of the 10th International Symposium on Algorithms and Experiments for Sensor Systems, Wireless Networks and Distributed Robotics (ALGOSENSORS), Wrozwław, Poland, 2014, pp. 135–151.

Four Soviets Walk the Dog–with an Application to Alt's Conjecture
K. Buchin, M. Buchin, W. Meulemans, and W. Mulzer
Proceedings of the 25th ACM-SIAM Symposium on Discrete Algorithms (SODA), Portland, USA, 2014, pp. 1399–1413.

Algorithms for Tolerated Tverberg Partition
W. Mulzer and Y. Stein
Proceedings of the 24th International Symposium on Algorithms and Computation (ISAAC), Hong Kong, 2013, pp. 295–305.
Invited to the special issue on ISAAC 2013 (IJCGA).

Flip Distance Between Triangulations of a Simple Polygon is NP-Complete
O. Aichholzer, W. Mulzer, and A. Pilz
Proceedings of the 21st Annual European Symposium on Algorithms (ESA), Sophia Antipolis, France, 2013, pp. 13–24.

Computing the Fréchet Distance with a Retractable Leash
K. Buchin, M. Buchin, R. van Leusden, W. Meulemans, and W. Mulzer
Proceedings of the 21st Annual European Symposium on Algorithms (ESA), Sophia Antipolis, France, 2013, pp. 241–252.

Vertex Deletion for 3D Delaunay Triangulations
K. Buchin, O. Devillers, W. Mulzer, O. Schrijvers, and J. Shewchuk
Proceedings of the 21st Annual European Symposium on Algorithms (ESA), Sophia Antipolis, France, 2013, pp. 253–264.

Unions of Onions
M. Löffler and W. Mulzer
Proceedings of the 13th Algorithms and Data Structures Symposium (WADS), London, Canada, 2013, pp. 487–498.

Data Structures on Event Graphs
B. Chazelle and W. Mulzer
Proceedings of the 20th Annual European Symposium on Algorithms (ESA), Ljubljana, Slovenia, 2012, pp. 313–324.

Approximating Tverberg Points in Linear Time for Any Fixed Dimension
W. Mulzer and D. Werner
Proceedings of the 28th Annual Symposium on Computational Geometry (SoCG), Chapel Hill, USA, 2012, pp. 303–310.
Invited to the special issue on SoCG 2012 (IJCGA).

Self-Improving Algorithms for Coordinate-Wise Maxima
K. L. Clarkson, W. Mulzer, and C. Seshadhri
Proceedings of the 28th Annual Symposium on Computational Geometry (SoCG), Chapel Hill, USA, 2012, pp. 277–286.

Convex Hull of Imprecise Points in $o(n \log n)$ Time after Preprocessing
E. Ezra and W. Mulzer
Proceedings of the 27th Annual Symposium on Computational Geometry (SoCG), Paris, France, 2011, pp. 11–20.
Invited to the special issue on SoCG 2011 (CGTA).

Triangulating the Square and Squaring the Triangle: Quadtrees and Delaunay Triangulations are Equivalent
M. Löffler and W. Mulzer
Proceedings of the 22nd ACM-SIAM Symposium on Discrete Algorithms (SODA), San Francisco, USA, 2011, pp. 1759–1777.

Self-Improving Algorithms for Convex Hulls
K. L. Clarkson, W. Mulzer, and C. Seshadhri
Proceedings of the 21st ACM-SIAM Symposium on Discrete Algorithms (SODA), Austin, USA, 2010, pp. 1546–1565.

Delaunay Triangulations in $O(\texttt{sort}(n))$ Time and More
K. Buchin and W. Mulzer
Proceedings of the 50th Annual Symposium on Foundations of Computer Science (FOCS), Atlanta, USA, 2009, pp. 139–148.

Delaunay Triangulation of Imprecise Points Simplified and Extended
K. Buchin, M. Löffler, P. Morin, and W. Mulzer
Proceedings of the 11th Algorithms and Data Structures Symposium (WADS), Banff, Canada, 2009, pp. 131–143.

Computing Hereditary Convex Structures
B. Chazelle and W. Mulzer
Proceedings of the 25th Annual Symposium on Computational Geometry (SoCG), Aarhus, Denmark, 2009, pp. 61–70.
Invited to the special issue on SoCG 2009 (DCG).

Markov Incremental Constructions
B. Chazelle and W. Mulzer
Proceedings of the 24th Annual Symposium on Computational Geometry (SoCG), College Park, USA, 2008, pp. 156–163.
Invited to the special issue on SoCG 2008 (DCG).

Minimum Weight Triangulation is NP-hard
W. Mulzer and G. Rote
Proceedings of the 22nd Annual Symposium on Computational Geometry (SoCG), Sedona, USA, 2006, pp. 1–10.
Invited to the special issue on SoCG 2006 (DCG).

Weakly Refereed Conferences and Workshops

Well-Separation and Hyperplane Transversals in High Dimensions
H. Bergold, D. Bertschinger, N. Grelier, W. Mulzer, and P. Schnider
Proceedings of the 38th European Workshop on Computational Geometry (EWCG), Perugia, Italy, 2022, 13:1–13:6.

Unique Sink Orientations of Grids is in Unique End of Potential Line
M. Borzechowski and W. Mulzer
Proceedings of the 38th European Workshop on Computational Geometry (EWCG), Perugia, Italy, 2022, 34:1–34:8.

Flipping Plane Spanning Paths
O. Aichholzer, K. Knorr, M. Löffler, Z. Masárová, W. Mulzer, J. Obenaus, R. Paul,

and B. Vogtenhuber
Proceedings of the 38th European Workshop on Computational Geometry (EWCG), Perugia, Italy, 2022, 66:1–66:7.

Long Plane Trees
S. Cabello, M. Hoffmann, K. Klost, W. Mulzer, and J. Tkadlec
Proceedings of the 37th European Workshop on Computational Geometry (EWCG), Saint Petersburg, Russia, 2021, 33:1–33:8.

Nearest-Neighbor Decompositions of Drawings
J. Cleve, N. Grelier, K. Knorr, M. Löffler, W. Mulzer, and D. Perz
Proceedings of the 37th European Workshop on Computational Geometry (EWCG), Saint Petersburg, Russia, 2021, 40:1–40:10.

Deletion only Dynamic Connectivity for Disk Graphs
H. Kaplan, K. Klost, K. Knorr, W. Mulzer, and L. Roditty
Proceedings of the 37th European Workshop on Computational Geometry (EWCG), Saint Petersburg, Russia, 2021, 58:1–58:8.

Sampling Hyperplanes and Revealing Disks
H. Kaplan, A. Kauer, W. Mulzer, and L. Roditty
Proceedings of the 37th European Workshop on Computational Geometry (EWCG), Saint Petersburg, Russia, 2021, 63:1–63:7.

Computational Complexity of the Alpha-Ham-Sandwich Problem
M. Chiu, A. Choudhary, and W. Mulzer
Proceedings of the 36th European Workshop on Computational Geometry (EWCG), Würzburg, Germany, 2020, 33:1–33:8.
Invited to the special issue on EWCG 2020 (CGTA).

Headerless Routing in Unit Disk Graphs
W. Mulzer and M. Willert
Proceedings of the 36th European Workshop on Computational Geometry (EWCG), Würzburg, Germany, 2020, 54:1–54:6.

A better approximation for longest noncrossing spanning trees
S. Cabello, A. Choudhary, M. Hoffmann, K. Klost, M. Mallik Reddy, W. Mulzer, F. Schröder, and J. Tkadlec
Proceedings of the 36th European Workshop on Computational Geometry (EWCG), Würzburg, Germany, 2020, 77:1–77:8.
Invited to the special issue on EWCG 2020 (CGTA).

The Tree Stabbing Number is not Monotone
W. Mulzer and J. Obenaus
Proceedings of the 36th European Workshop on Computational Geometry (EWCG), Würzburg, Germany, 2020, 78:1–78:8.

Routing in Histograms
M. Chiu, J. Cleve, K. Klost, M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, and M. Willert
Proceedings of the 35th European Workshop on Computational Geometry (EWCG), Utrecht, The Netherlands, 2019, 18:1–8.

Testing Transmission Graphs for Acyclicity
H. Kaplan, K. Klost, W. Mulzer, L. Roditty, and M. Sharir
Proceedings of the 35th European Workshop on Computational Geometry (EWCG), Utrecht, The Netherlands, 2019, 26:1–6.

Dynamic Maintenance of the Lower Envelope of Pseudo-Lines
P. K. Agarwal, R. Cohen, D. Halperin, and W. Mulzer
Proceedings of the 35th European Workshop on Computational Geometry (EWCG), Utrecht, The Netherlands, 2019, 27:1–7.

Dynamic Disk Connectivity
A. Kauer and W. Mulzer
Proceedings of the 35th European Workshop on Computational Geometry (EWCG), Utrecht, The Netherlands, 2019, 50:1–6.

Minimal Geometric Graph Representations of Order Types
O. Aichholzer, M. Balko, M. Hoffmann, J. Kynčl, W. Mulzer, I. Parada, A. Pilz, M. Scheucher, P. Valtr, B. Vogtenhuber, and E. Welzl
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 21:1–6.

Stabbing Pairwise Intersecting Disks by Five Points
S. Har-Peled, H. Kaplan, W. Mulzer, L. Roditty, P. Seiferth, M. Sharir, and M. Willert
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 29:1–6.

NP-Completeness of Max-Cut for Segment Intersection Graphs
O. Aichholzer, W. Mulzer, P. Schnider, and B. Vogtenhuber
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 32:1–6.

Combinatorics of Beacon-based Routing in Three Dimensions
J. Cleve and W. Mulzer
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 48:1–6.

Time-Space Trade-Offs for Computing Euclidean Minimum Spanning Trees
L. Barba, B. Banyassady, and W. Mulzer
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 51:1–6.

Finding the Girth in Disk Graphs and a Directed Triangle in Transmission Graphs
H. Kaplan, K. Klost, W. Mulzer, and L. Roditty
Proceedings of the 34th European Workshop on Computational Geometry (EWCG), Berlin, Germany, 2018, pp. 68:1–6.

Routing in Simple Polygons
M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, Y. Stein, B. Vogtenhuber, and M. Willert
Proceedings of the 33rd European Workshop on Computational Geometry (EWCG), Malmö, Sweden, 2017, pp. 17–20.
Invited to the special issue on EWCG 2017 (CGTA).

An Experimental Study of Algorithms for Geodesic Shortest Paths in the Constant Workspace Model
J. Cleve and W. Mulzer
Proceedings of the 33rd European Workshop on Computational Geometry (EWCG), Malmö, Sweden, 2017, pp. 165–168.

Finding Triangles and Computing the Girth in Disk Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth

Proceedings of the 33rd European Workshop on Computational Geometry (EWCG), Malmö, Sweden, 2017, pp. 205–208.

Delta-Fast Tries: Local Searches in Bounded Universes with Linear Space
M. Ehrhardt and W. Mulzer
Proceedings of the 33rd European Workshop on Computational Geometry (EWCG), Malmö, Sweden, 2017, pp. 257–260.
Invited to the special issue on EWCG 2017 (CGTA).

A Simple Analysis of Rabin's Algorithm for Finding Closest Pairs
B. Banyassady and W. Mulzer
Proceedings of the 33rd European Workshop on Computational Geometry (EWCG), Malmö, Sweden, 2017, pp. 261–264.

Dynamic Connectivity for Unit Disk Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 32nd European Workshop on Computational Geometry (EWCG), Lugano, Switzerland, 2016.

Generalized Colorful Linear Programming and Further Applications
F. Meunier, W. Mulzer, P. Sarrabezolles, and Y. Stein
Proceedings of the 32nd European Workshop on Computational Geometry (EWCG), Lugano, Switzerland, 2016.

Finding the k-Visibility Region of a Point in a Simple Polygon in the Memory-Constrained Model
Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, and W. Mulzer
Proceedings of the 32nd European Workshop on Computational Geometry (EWCG), Lugano, Switzerland, 2016.

Fine-Grained Analysis of Problems on Curves
K. Buchin, M. Buchin, M. Konzack, W. Mulzer, and A. Schulz
Proceedings of the 32nd European Workshop on Computational Geometry (EWCG), Lugano, Switzerland, 2016.

Approximating the Colorful Carathéodory Theorem
W. Mulzer and Y. Stein
Proceedings of the 31st European Workshop on Computational Geometry (EWCG), Ljubljana, Slovenia, 2015, pp. 20–23.
Invited to the special issue on EWCG 2015 (CGTA).

The Number of Combinatorially Different Convex Hulls of Points in Lines
H. Kim, W. Mulzer, and E. Oh
Proceedings of the 31st European Workshop on Computational Geometry (EWCG), Ljubljana, Slovenia, 2015, pp. 161–164.

Efficient Spanner Construction for Directed Transmission Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 31st European Workshop on Computational Geometry (EWCG), Ljubljana, Slovenia, 2015, pp. 172–175.
Invited to the special issue on EWCG 2015 (CGTA).

Time-Space Trade-offs for Voronoi Diagrams
M. Korman, W. Mulzer, A. van Renssen, M. Roeloffzen, P. Seiferth, and Y. Stein
Proceedings of the 31st European Workshop on Computational Geometry (EWCG), Ljubljana, Slovenia, 2015, pp. 248–251.
Invited to the special issue on EWCG 2015 (CGTA).

Low-Crossing Spanning Trees: an Alternative Proof and Experiments
P. Giannopoulos, M. Konzack, and W. Mulzer
Proceedings of the 30th European Workshop on Computational Geometry (EWCG), Ein-Gedi, Israel, 2014.

Reachability Oracles for Disk Transmission Graphs
H. Kaplan, W. Mulzer, L. Roditty, and P. Seiferth
Proceedings of the 30th European Workshop on Computational Geometry (EWCG), Ein-Gedi, Israel, 2014.

Minimum Dual Diameter Triangulations
M. Korman, S. Langerman, W. Mulzer, A. Pilz, and B. Vogtenhuber
Proceedings of the 30th European Workshop on Computational Geometry (EWCG), Ein-Gedi, Israel, 2014.

Complexity of Finding Nearest Colorful Polytopes
W. Mulzer and Y. Stein
Proceedings of the 30th European Workshop on Computational Geometry (EWCG), Ein-Gedi, Israel, 2014.

Unions of Onions
M. Löffler and W. Mulzer
Proceedings of the 29th European Workshop on Computational Geometry (EWCG), Brunswick, Germany, 2013, pp. 61–64.

Flip Distance Between Triangulations of a Simple Polygon is NP-Complete
O. Aichholzer, W. Mulzer, and A. Pilz
Proceedings of the 29th European Workshop on Computational Geometry (EWCG), Brunswick, Germany, 2013, pp. 115–118.

Computational Aspects of Triangulations with Bounded Dilation
W. Mulzer and P. Seiferth
Proceedings of the 29th European Workshop on Computational Geometry (EWCG), Brunswick, Germany, 2013, pp. 123–126.

Memory-Constrained Algorithms for Simple Polygons
T. Asano, K. Buchin, M. Buchin, M. Korman, W. Mulzer, G. Rote, and A. Schulz
Proceedings of the 4th Workshop on MASSIVE Data Algorithmics (MASSIVE), Ljubljana, Slovenia, 2012, pp. 30–44.

Memory-Constrained Algorithms for Simple Polygons
T. Asano, K. Buchin, M. Buchin, M. Korman, W. Mulzer, G. Rote, and A. Schulz
Proceedings of the 28th European Workshop on Computational Geometry (EWCG), Assisi, Italy, 2012, pp. 49–52.

A Lower Bound for Shallow Partitions
W. Mulzer and D. Werner
Proceedings of the 28th European Workshop on Computational Geometry (EWCG), Assisi, Italy, 2012, pp. 129–132.

Approximating Tverberg Points in Linear Time for Any Fixed Dimension
W. Mulzer and D. Werner
Proceedings of the 28th European Workshop on Computational Geometry (EWCG), Assisi, Italy, 2012, pp. 165–168.

Convex Hull of Imprecise Points in $o(n \log n)$ Time after Preprocessing
E. Ezra and W. Mulzer
Proceedings of the 27th European Workshop on Computational Geometry (EWCG),

Morschach, Switzerland, 2011, pp. 209–212.
Invited to the special issue on EWCG 2011 (CGTA).

Linear-Time Delaunay Triangulations Simplified
K. Buchin and W. Mulzer
Proceedings of the 25th European Workshop on Computational Geometry (EWCG), Brussels, Belgium, 2009, pp. 235–238.

An Exclusion Region for the Minimum Dilation Triangulation
C. Knauer and W. Mulzer
Proceedings of the 21st European Workshop on Computational Geometry (EWCG), Eindhoven, The Netherlands, 2005, pp. 33–36.

Technical Reports and Theses

Maximum matching in disk graphs of bounded depth
S. Cabello and W. Mulzer
Talk presented at the XVIII Spanish Meeting on Computational Geometry (EGC), Girona, Spain, 2019, p. 4.

LiveCG: an Interactive Visualization Environment for Computational Geometry
S. Kürten and W. Mulzer
Multimedia Proceedings of the 30 Annual ACM Symposium on Computational Geometry (SoCG), Kyoto, Japan, 2014, pp. 86–87.

Low-Entropy Computational Geometry
W. Mulzer
Doctoral Thesis. Princeton University, 2010.

A Constant-Work-Space Algorithm for Shortest Paths in Simple Polygons
T. Asano, W. Mulzer, and Y. Wang
Accompanying an invited talk in Proceedings of the 4th Workshop on Algorithms and Computation (WALCOM), Dhaka, Bangladesh, 2010, pp. 9–20.

Minimum Dilation Triangulations
C. Knauer and W. Mulzer
Technical Report B-05-06. Freie Universität Berlin, April 2005.

Minimum Dilation Triangulations for the Regular n-Gon
W. Mulzer
Masters Thesis. Freie Universität Berlin, 2004.

Grants

DFG Grant MU 3501/1-1 — "Strukturierte Eingaben für geometrische Probleme charakterisieren, verstehen und ausnutzen"
3 years, 248.000 €

GIF Grant 1161/2011 — "Dynamic and kinetic algorithms in theory and in practice"
Principal Investigator with Haim Kaplan, Liam Roditty, Cooperating Investigators Kurt Mehlhorn and Umut Acar
3 years, 180.000 €

DFG Grant MU 3501/2-1 — "Geometrische Algorithmen mit beschränktem Arbeitsspeicher"
Principal Investigator with Günter Rote.
3 years, 221.600 €

DFG Grant MU 3501/1-2 — "Strukturierte Eingaben für geometrische Probleme charakterisieren, verstehen und ausnutzen"
2 years, 160.000 €

GIF Grant 1367/2016 — "Algorithms for Geometric Graphs – Tools, Techniques, Applications"
Principal Investigator with Haim Kaplan, Liam Roditty, and Micha Sharir
3 years, 160.000 €

ERC StG 757609—"Complexity Inside NP–A Computational Geometry Perspective"
5 years, 1,486,800 €

DFG Grant MU 3501/4-1 — "34. Europäischer Workshop über Algorithmische Geometrie"
20.000 €

DFG Grant MU 3501/3-1 — "Arrangements and Graph Drawing"
Principal Investigator with Stefan Felsner, Michael Hoffmann, and Birgit Vogtenhuber
2 years, 175.800 €

DFG Grant MU 3501/2-2 — "Geometrische Algorithmen mit beschränktem Arbeitsspeicher"
1 year, 82.400 €

Invited Talks

The Many Compotational Models of Computational Geometry
Computability in Europe (CiE): Special Session on Computational Geometry
July 2021

Long Alternatinv Paths Exist
Budapest Big Combinatorics + Geometry (BBC+G) Seminar
February 2021

Long Alternatinv Paths Exist
Tel Aviv University — Computational Geometry Seminar
November 2020

Asymmetric Convex Intersection Testing (ACIT)
Machine Learning and Combinatorics Workshop
October 2020

Dynamic Maintenance of the Lower Envelope of Pseudo-Lines
KAM, Charles University Prague— Noon Seminar
May 2019

Asymmetric Convex Intersection Testing (ACIT)
LIGM — Université Paris-Est Marne-la-Vallé
March 2019

Finding Triangles in Disk Intersection Graphs and Transmission Graphs
Japan-Austria Bilateral Seminar: Computational Geometry Seminar with Applications to Sensor Networks
November 2018

Computational Geometry with Limited Work-Space: State of the Art and Challenges
Fields Workshop on Discrete and Computational Geometry
July 2017

Routing in Unit Disk Graphs
LIGM — Université Paris-Est Marne-la-Vallé
May 2016

Approximate k-flat Nearest Neighbor Search
Tohoku University — Reading Group
March 2016

New Perspectives on Old Problems
FSU Jena — Department Colloquium
November 2015

Approximability of the Discrete Fréchet Distance
Carleton University — Algorithms Seminar
August 2015

Was ist ein Beweis? Ansichten eines Informatikers
FU Berlin — Verleihung der Dr. Hans Riegel-Fachpreise 2015
May 2015

Computational Geometry with Bounded Workspace
Amirkabir University — 7th Winter School on Computational Geometry
February 2015

New Algorithms for the Fréchet Distance
Shiraz University — Shiraz University Robotics Association
February 2015

New Algorithms for Classic Problems from Computational Geometry
TU Graz — Colloquium on Computational Topology and Geometry
January 2015

Complexity of Finding Nearest Colorful Polytopes
Tohoku University — Network Algorithms Seminar
November 2014

Approximating the Colorful Carathéodory Theorem
Tel Aviv University — Computational Geometry Seminar
October 2014

New Algorithms for Classic Problems from Computational Geometry
Universität Hamburg – Department Colloquium
June 2014

New Algorithms for the Fréchet Distance
Universität Bonn – Department Colloquium
February 2014

New Algorithms for the Fréchet Distance
Max Planck Institut für Informatik – D1 Seminar
December 2013

Planar Delaunay Triangulations and Proximity Structures
ERC "SDModels" Workshop: Delaunay Geometry: Polytopes, Triangulations and Spheres
October 2013

Unions of Onions
Ben Gurion University — Theory Reading Group
May 2013

Computing the Fréchet Distance with a Retractable Leash
Tel Aviv University — Computational Geometry Seminar
May 2013

Four Soviets Walk the Dog
Universität Bayreuth — Department Colloquium
May 2013

Self-improving Algorithms for Coordinate-wise Maxima
TU Eindhoven — Noon Seminar
August 2012

A Lower Bound for Shallow Partitions
Technische Universität Berlin — MDS Colloquium
February 2012

Triangulating the Square and Squaring the Triangle
TU Eindhoven — Noon Seminar
May 2011

Triangulating the Square and Squaring the Triangle
Université libre de Bruxelles — Computer Science Seminar
May 2011

Triangulating the Square and Squaring the Triangle
Humboldt Universität zu Berlin — MDS Colloquium
January 2011

Low-Entropy Computational Geometry
University of Texas at San Antonio — CS Department Colloquium
March 2010

Delaunay Triangulations in $O(\texttt{sort}(n))$ Time and More
Carleton University — Algorithms Seminar
February 2010

Low-Entropy Computational Geometry
Freie Universität Berlin — CS Department Colloquium
January 2010

Delaunay Triangulations in $O(\texttt{sort}(n))$ Time and More
IBM T. J. Watson Research Center — IP Seminar
November 2009

Markov Incremental Constructions
Princeton University — CS Industrial Affiliates Day
September 2008

Teaching

Grundlagen der Theoretischen Informatik **Spring 2022**
(Theory of Computation)

Semantik von Programmiersprachen
(Semantics of Programming Languages)

Komplexitätstheorie **Fall 2021/22**
(Computational Complexity Theory, with Jonas Cleve)

Logik und Diskrete Mathematik **Fall 2020/21**
(Logic and Discrete Mathematics)

Grundlagen der Theoretischen Informatik **Spring 2020**
(Theory of Computation)

Proseminar Programmiersprachen
(Undergraduate Seminar Programming Languages)

Höhere Algorithmik **Fall 2019/20**
(Advanced Algorithms)

Approximationsalgorithmen
(Approximation Algorithms)

Algorithmen, Datenstrukturen und Datenabstraktion **Fall 2018/19**
(Algorithms, Data Structures and Data Abstraction)

Grundlagen der Theoretischen Informatik **Spring 2018**
(Theory of Computation)

Nichtsequentielle und Verteilte Programmierung
(Concurrent and Distributed Programming, with Katinka Wolter)

Algorithmen, Datenstrukturen und Datenabstraktion **Fall 2017/18**
(Algorithms, Data Structures and Data Abstraction)

Seminar über Algorithmen
(Seminar on Algorithms)

Höhere Algorithmik II **Spring 2017**
(Advanced Algorithms II)

Semantik von Programmiersprachen
(Semantics of Programming Languages)

Proseminar Theoretische Informatik
(Undergraduate Seminar on Algorithms)

Höhere Algorithmik **Fall 2016/17**
(Advanced Algorithms)

Randomisierte Algorithmen
(Randomized Algorithms, with Paul Seiferth)

Informatik B **Spring 2016**
(Computer Science B)

Komplexitätstheorie
(Computational Complexity Theory, with Claudia Dieckmann)

Informatik A **Fall 2015/6**
(Computer Science A)

Proseminar Theoretische Informatik
(Undergraduate Seminar on the Theory of Computation)

Grundlagen der Theoretischen Informatik **Spring 2015**
(Theory of Computation)

Höhere Algorithmik 2
(Advanced Algorithms 2, with Lena Schlipf and Yannik Stein)

Grundlagen der Theoretischen Informatik **Spring 2014**
(Theory of Computation)

Datenstrukturen
(Data Structures, with Claudia Dieckmann and Yannik Stein)

Algorithmen und Programmierung III **Fall 2013/4**
(Algorithms and Programming III)

Seminar über Algorithmen
(Seminar on Algorithms, with Yannik Stein)

Algorithmische Geometrie **Spring 2013**
(Computational Geometry, with Panos Giannopoulos)

Höhere Algorithmik 2
(Advanced Algorithms 2, with Helmut Alt)

Komplexitätstheorie **Fall 2012/3**
(Computational Complexity Theory)

Grundlagen der Theoretischen Informatik **Spring 2012**
(Theory of Computation)

Approximation Algorithms
(with Panos Giannopoulos)

Höhere Algorithmik **Fall 2011/2**
(Advanced Algorithms)

Seminar über Algorithmen
(Seminar on Algorithms)

Algorithmische Geometrie **Spring 2011**
(Computational Geometry)

Algorithmen und Programmierung III **Fall 2010/1**
(Algorithms and Programming III)

In February 2013, I completed the *Berlin Certificate for University Teaching* (Berliner Zertifikat für Hochschullehre).

ADVISING

former postdocs: Man Kwun Chiu, Aruni Choudhary

current PhD students: Michaela Borzechowski, Jonas Cleve, Alexander Kauer, Kristin Knorr, Johannes Obenaus, Boris Zolotov (joint with Elena Arseneva, SPbU)

finished PhD:

1. *Disk Intersection Graphs: Models, Data Structures, and Algorithms*
   Paul Seiferth (defended on 19.08.2016)

2. *The Colorful Carathéodory Problem and its Descendants*
   Yannik Stein (defended on 21.10.2016)

3. *The Limited Workspace Model for Geometric Algorithms*
   Bahareh Banyassady (defended on 26.04.2019)

4. *Routing and Stabbing*
   Max Willert (defended on 24.03.2021)

5. *Geometric Graphs: Reachability, Long Trees and Short Cycles*
   Katharina Klost (defended on 21.09.2021)

finished undergraduate:

1. *Experimenteller Vergleich verschiedener binärer Suchbäume unter verschiedenen Abfragesequenzen*
   Benjamin Bortfeld (Dipl-Inform., finished on 19.07.2012)

2. *Computational Aspects of Triangulations with Constant Dilation*
   Paul Seiferth (MSc Inf, finished on 26.11.2012)

3. *APSP-Schätzer in Hamiltonschen Graphen*
   Robert Engelhoven (Dipl-Math., finished on 20.12.2012)

4. *Theoretische und Experimentelle Untersuchung von Kuckucks-Hashing*
   Terese Haimberger (BSc Inf, finished on 29.01.2013)

5. *Theoretische Betrachtung von B^+-Bäumen mit vereinfachter Löschoperation*
   Nadja Scharf (BSc Inf, finished on 08.03.2013)

6. *Tolerated Tverberg Partitions: An Algorithmic Approach*
   Yannik Stein (MSc Inf, finished on 28.03.2013)

7. *Interferenzminimierung in eindimensionalen Sensornetzen*
   Dustin Eversmann (Dipl-Inform., finished on 05.04.2013)

8. *Quake-Heap vs Fibonacci-Heap: Implementierung, Untersuchung, Bewertung*
   Daniel Krompass (BSc Inf, finished on 20.06.2013)

9. *Approximative Computations on Spanning Trees with Low Crossing Number*
   Maximilian Konzack (MSc Inf, finished on 30.07.2013)

10. *Planarity Testing via PQ-Trees: Then and Now*
    Christopher Pockrandt (BSc Inf, finished on 19.09.2013)

11. *Approximation Algorithms for Interval Scheduling Problems with Given Machines*
    Robert L. Gottwald (BSc Inf, finished on 21.02.2014)

12. *LiveCG: a Framework for Interactive Visualization of Algorithms from Computational Geometry*
    Sebastian Kürten (MSc Inf, finished on 24.04.2014)

13. *Details on the Integer Sorting Algorithm by Han and Thorup Using $O(n\sqrt{\log\log n})$ Time and Linear Space*
    Katharina Klost (BSc Inf, finished on 15.01.2015)

14. *Untersuchung einer Verbesserung des Algorithmus für das 3SUM-Problem und Anwendung an einem 3SUM-schweren Problem*
    Lilian Hung (BSc Inf, finished on 05.02.2015)

15. *Implementation of and Experiments on Centerpoint Approximation Algorithms*
    Alexander Kauer (BSc Inf, finished on 17.02.2015)

16. *Implementierung eines Approximations-Algorithmus für die Berechnung der diskreten Fréchet-Metrik*
    Tudor Soroceanu (BSc Inf, finished on 19.05.2015)

17. *Entwicklung und Implementierung eines Verfahrens zur automatisierten CAD-Baugruppenrekonstruktion*
    Josephine Mertens (BSc Inf, finished on 20.05.2015)

18. *"Unions of onions: Preprocessing imprecise points for fast onion decomposition" — Die Implementierung und Visualisierung des Algorithmus*
    Manuel Jain (Dipl-Inform., finished on 27.08.2015)

19. *Darstellung und Vergleich von Beweisen für planare Separatoren*
    Nico Hinze (BSc Inf, finished on 28.08.2015)

20. *An In-Depth Analysis of Data Structures Derived from van-Emde-Boas-Trees*
    Marcel Ehrhardt (MSc Inf, finished on 22.10.2015)

21. *Dissecting DOS 1.x. Details Beyond the Known Historical Parts*
    Johannes Tigges (BSc Inf, finished on 02.02.2016)

22. *Implementierung einer Datenstruktur für den dynamischen Zusammenhang für allgemeine und Unit Disk Graphen*
    Markus Sähn (BSc Inf, finished on 05.04.2016)

23. *Integration von Softwareprototypen zur optischen und teilautomatisierten Erkennung von Leiterplattenstrukturen*
    Alexander Hinze-Hüttl (BSc Inf, finished on 25.05.2016)

24. *Routing Schemes for Disk Graphs and Polygons*
    Max Willert (MEd, finished on 09.08.2016)

25. *Complexity of Regular Expression Matching*
    Boris Dimitrov (BSc Inf, finished on 13.10.2016)

26. *Implementing an Algorithm for Routing in Unit-Disk-Graphs*
    Christoph Brockmann (BSc Inf, finished on 18.10.2016)

27. *The complexity class Polynomial Local Search (PLS) and PLS-complete problems*
    Michaela Borzechowski (BSc Inf, finished on 25.10.2016)

28. *On Planar 3-SAT and its Variants*
    Simon Tippenhauer (MSc Inf, finished on 15.11.2016)

29. *Deterministisches Partitionieren in linearer Zeit auf der Word-RAM*
    Benjamin Aram Berendsohn (BSc Inf, finished on 06.12.2016)

30. *Erstellung eines GLL-Parsergenerators für kontextfreie Grammatiken*
    Miro Baeten (BSc Inf, finished on 14.02.2017)

31. *Complexity of recognizing generalized transmission graphs*
    Katharina Klost (MSc Inf, finished on 16.03.2017)

32. *Combinatorics of Beacon-based Routing and Guarding in Three Dimensions*
    Jonas Cleve (MSc Inf, finished on 30.03.2017)

33. *Kompression von Englischen Texten unter Verwendung von Lexikalischer Kategorisierung und PPM*
    Michael Wesolek (BSc Inf, finished on 18.04.2017)

34. *Aufbau und Struktur von CP/M 1.3 im historischen Kontext*
    Tilman Blumenbach (BSc Inf, finished on 05.05.2017)

35. *Jump Point Search auf verallgemeinerten Spielbrettern*
    Felix Wiener (BSc Inf, finished on 04.07.2017)

36. *Implementierung eines Flower Pollination Algorithmus, zur Minimierung des Fréchet-Abstands*
    Henning Steinmetz (BSc Inf, finished on 11.07.2017)

37. *Optimale Orientierung eines 3D-Modells für den Metalldruck*
    Jakob Köhler (BSc Inf, finished on 08.08.2017)

38. *Image Sensitivity Analysis with Deep Neural Networks*
    Zacharias Fisches (BSc Inf, finished on 25.09.2017)

39. *Radial Systems in Three Dimensions*
    Alexander Kauer (MSc Inf, finished on 29.09.2017)

40. *Fast dynamic planar convex set maintenance using finger trees*
    Christian Hofer (BSc Inf, finished on 05.12.2017)

41. *Modellierung von Scheduling Regeln in business-optimiertem Timetabling*
    Simon Putzke (MSc Inf, finished on 28.06.2018)

42. *Rank-Pairing-Heaps und Hollow-Heaps vs. Fibonacci-Heaps - eine theoretische Betrachtung*
    Felicitas Landes (BSc Inf, finished on 14.08.2018)

43. *Routing in Geometric Intersection Graphs*
    Maria Hartmann (BSc Inf, finished on 16.08.2018)

44. *Federated Learning*
    Florian Hartmann (MSc Inf, finished on 23.08.2018)

45. *C delta: Design and Implementation of a Transcompiler for Language Integrated Finite-State Machines in C sharp*
    David Sungaila (MSc Inf, finished on 30.08.2018)

46. *Didaktische Aufarbeitung der Monte-Carlo-Baumsuche*
    Claas Fandré (BSc Inf, finished on 27.09.2018)

47. *Theoretische und praktische Evaluation eines dynamischen Algorithmus für das APSP-Problem*
    Ulrike Bath (BSc Math, finished on 18.10.2018)

48. *Vergleich von dezentralen elektronischen Kryptowährungen*
    Cem Köylü (BSc Inf, finished on 30.11.2018)

49. *Dynamic Connectivity for Intersection Graphs of Unit Squares*
    Kristin Knorr (MSc Inf, finished on 13.12.2018)

50. *A comparative study of some proofs of Chernoff's bound with regard to their applicability for deriving concentration inequalities*
    Natalia Shenkman (MEd, finished on 10.01.2019)

51. *Untersuchung von Constant-Workspace-Algorithmen zur Erstellung von Delaunay-Triangulationen und Voronoi-Diagrammen*
    Mika Delor (BSc Inf, finished on 15.01.2019)

52. *Experimental Evaluation of an Algorithm for Finding a Triangle in Disc Graphs*
    Othman Watad (BSc Inf, finished on 08.02.2019)

53. *Lösung des APSP-Problems nach Ryan Williams*
    Chosro Elijazyfer (BSc Math, finished on 05.03.2019)

54. *Real-Time Global Illumination using OpenGL and Voxel Cone Tracing*
    Benjamin Kahl (BSc Inf, finished on 05.03.2019)

55. *Automatisierte Verifikation von Systemarchitekturen und -spezifikationen unter Verwendung von semi-formalen Templatesprachen und SysML*
Christian Laßan (MSc Inf, finished on 22.03.2019)

56. *Explicit-State-Model-Checker für drei angewandte eingebettete domänenspezifische Sprachen zur Modellierung von Nebenläufigkeit in Scala*
Daniel Jentsch (MSc Inf, finished on 07.06.2019)

57. *Spanning Trees with Low (Shallow) Stabbing Number*
Johannes Obenaus (MSc Inf, ETH Zürich, finished on 01.10.2019)

58. *Konzeption und Entwicklung eines Smart-Home Add-Ons auf Basis einer Webanwendung zur Informationsausgabe des Wohngebietes*
Murat Uzun (MSc Inf, finished on 09.10.2019)

59. *Die theoretische Betrachtung des Bloom-Filters und einige seiner Erweiterungen*
Erik Grahl (BSc Inf, finished on 26.11.2019)

60. *Zip-Trees: Analysis, Implementation and Comparison with Related Data Structures*
Jennifer Manke (BSc Inf, finished on 28.11.2019)

61. *Simple Tabulation Hashing for Chaining*
Shasha Jiang (BSc Inf, finished on 14.02.2020)

62. *Extension and implementation of Algorithms for growing prioritized disks in higher dimensions*
Simón Auch (MSc Inf, finished on 16.03.2020)

63. *The Theory behind Map-Reduce*
Nicolo Knapp (BSc Inf, finished on 21.04.2020)

64. *Solving Asymmetric Convex Intersection Testing with Chan's Randomized Optimization Technique for implicitly defined LP-type problems*
Tim Rüttinger (BSc Math, finished on 28.04.2020)

65. *Streckenoptimierung für elektronisch betriebene Fahrzeuge*
Mark Niehues (BSc Inf, finished on 12.06.2020)

66. *Theoretische Untersuchung des Boyer-Myrvold-Algorithmus*
Roy-Michael Wellner (BSc Inf, finished on 15.09.2020)

67. *Implementierung und Evaluation von Techniken zur Bestimmung von Extremwerten*
Jan Gellbach (BSc Inf, finished on 24.09.2020)

68. *A practical data structure for the dynamic lower envelope of pseudo-lines*
Bas van Loon (MSc, TU Eindhoven, finished on 25.09.2020)

69. *Implementierung und Evaluation eines Routing Algorithmus für polygonale Gebiete*
Florian Alex (BSc Inf, finished on 29.10.2020)

70. *Algorithmus zum Aufdecken von Wahlauffälligkeiten*
Wael Amayri (BSc Inf, finished on 17.12.2020)

71. *Implementierung und Evaluierung des Suffixbaum-Algorithmus von Ukkonen*
Tim-Maxim Birkner (BSc Inf, finished on 14.01.2021)

72. *Experimental evaluation of the runtime properties for a presented reachability oracle for representing the connectivity of transmission graphs*
Lorenzo Melchior (BSc Inf, finished on 28.01.2021)

73. *Die Berechnungsmodelle Zellulärer Automat, Markow-Algorithmus, Post'sches Tag-System und Zählermaschine*
Lavinia Electra Kulawik (BSc Inf, finished on 09.02.2021)

74. *The Complexity Class Unique End of Potential Line*
Michaela Borzechowski (MSc Inf, finished on 18.03.2021)

75. *An experimental evaluation of selection algorithms*
Jiale Cheng (BSc Inf, finished on 15.06.2021)

76. *Algorithmic creation of custum-tailored catering menus based on pattern detection in historic and usage data*
Tim Kluge (BSc Inf, finished on 15.06.2021)

77. *Robust algorithms for finding a triangle in abstractly given unit disk graphs in polynomial time*
Viktoriya Kraleva (BSc Inf, finished on 07.07.2021)

78. *Entwicklung eines optimierten Clipping-Algorithmus für Dreiecke basierend auf Entscheidungsbäumen*
Felix Wiener (MEd, finished on 30.08.2021)

79. *Was ist der beste Trade-off für die Anzahl der Finger in Fingerbäumen und wie kann man in der Praxis Informationen über die Struktur ausnutzen?*
Anna Schapiro (BSc Inf, finished on 15.09.2021)

80. *Punktfindung in der konvexen Hülle unter Berücksichtigung der Differential Privacy*
Leon Preusker (BSc Inf, finished on 01.10.2021)

81. *Entwurf des Lerninhalts zum Thema Bayes-Netze für die Lehrveranstaltung 'Logik und diskrete Mathematik'*
Elizaveta Govor (BSc Inf, finished on 08.10.2021)

in progress undergraduate: Florian Alex (MSc Inf)

reader: Christian Richter (Dipl-Math., 2012), Robert Georges (Dipl-Math., 2012), Thore Kübart (Dipl-Math., 2012), Simon Tippenhauer (BSc Inf, 2012), István Bartkowiak (BSc Inf, 2013), Christian Windolf (BSc Inf, 2013), Felix Herter (BSc Inf, 2014), Max Willert (BSc Inf, 2014), Dirk Braun (BSc Inf, 2015), Nadja Scharf (MSc Inf, 2015), Dirk Braun (MEd, 2015), Christoph Krüger (MSc Inf, 2016), Nils Bussas (MSc Inf, 2017), Tobias Groß (BSc Inf, 2017), Anton Begehr (BSc Inf, 2018), Finn Pauls (BSc Inf, 2018), Fabian Brandt (MSc Inf, 2018), Sandra Takano (BSc Inf, 2018), Nils Hutmacher (BSc Inf, 2019), Yuriy Marchenko (MSc Inf, 2019), David Wellner (BSc Inf, 2019), Benjamin Aram Berendsohn (MSc Inf, 2019), Lena Strobl (BSc Inf, 2019), Jonathan Gadea Harder (BSc Inf, 2019), Justus Pfannschmidt (BSc Inf, 2020), William Surau (BSc Inf, 2020), Taras Kolba (MSc Inf, 2020), Simon Gene Gottlieb (MSc Inf, 2020), Banafshe Sadeghi (BSc Inf, 2020), Maria Hartmann (MSc Inf, 2020), Dennis Nikolaus Natusch (BSc Inf, 2021), Nils Goldmann (BSc Inf, 2021), Florian Suhre (BSc Inf, 2021), Fang Lin (BSc Inf, 2022), Christian Offner (BSc Inf, 2022), Claire Alexandra Bräuer (BSc Inf, 2022)

PhD committee member: Jens M. Schmidt (Dr. rer. nat., 2011), Sven Scholz (Dr. rer. nat., 2011), Claudia Dieckmann (Dr. rer. nat., 2012), Daniel Werner (Dr. rer. nat., 2013), Rafel Jaume Deyà (Dr. rer. nat., 2014), Pauline Sarrabezolles (Docteur, 2015), Sebastian Müller (Dr. rer. nat., 2015), Heuna Kim (Dr. rer. nat., 2016), Christopher Kusch (Dr. rer. nat., 2017)

PhD thesis reviewer: Udo Hoffmann (Dr. rer. nat., 2016), Kai Jin (PhD, 2016), Stef Sijben (Dr. rer. nat., 2017), Quirijn Bouts (Dr., 2017), Aleksandar Markovic (Dr., 2019), Mónika Csikós (Docteur, 2022), Nicolas Grelier (,)

Service

- Editorial Boards: JoCG, TALG
- Founding Editor: Computing in Geometry and Topology (with David Eppstein and Marc van Kreveld)
- Editor: Special Issue on EuroCG 2018 (CGTA Volume 84, November 2019; with Matias Korman)
- PC Chair: SoCG 2015 (video), EuroCG 2018 (co-chair with Matias Korman), SoCG 2024 (co-chair with Jeff M. Phillips)
- PC Memberships: EuroCG 2014, SoCG 2014 (video), ISAAC 2014, ICALP 2015 (Track A), ICALP 2015 Young Researcher Forum, SKILL 2015, EuroCG 2016, SoCG 2016, SKILL 2016, EuroCG 2017, ESA 2017 (Track A), CCCG 2017, SODA 2018, EGC 2019, SoCG 2019 (video), WADS 2019, CCCG 2019, SODA 2020, SWAT 2020, ICCG 2021, SoCG 2021, EuroCG 2021, ICALP 2021 (Track A), ICALP 2022 (Track A), CCCG 2022, ESA 2022 (Track A)
- Reviewer for JACM (3x) , IJCGA (4x), CGTA (12x), SICOMP (7x), DCG (8x), JoCG (9x), IPL (5x), JDA, DMTCS, TCS (7x), Algorithmica (10x), InfComp, IJFCS, JCSS, TOCS, TALG (4x), DAM (4x), GCOM, SISC, JCTB, Israel Science Foundation (ISF, 5x), US-Israel Binational Science Foundation (BSF), DAAD, Danish Council for Independent Research (DFF), Austrian Science Fund (FWF, 3x), ACM India Dissertation Award, RGC Hong Kong (2x), Deutsche Forschungsgemeinschaft (DFG, 4x), Natural Sciences and Engineering Research Council Canada (NSERC, 2x), TUe Summa Cum Laude Committee, Studienstiftung des deutschen Volkes, SoCG 2005 (3x), LATIN 2008, SODA 2010, STACS 2010, ESA 2010, FSTTCS 2010, SODA 2011, WADS 2011, ICALP 2011 (3x), ESA 2011, SoCG 2012, FOCS 2012, ESA 2012 (2x), MFCS 2012, SODA 2013 (2x), STACS 2013 (2x), CIAC 2013, SoCG 2013, WADS 2013, APPROX 2013, ESA 2013 (2x), SODA 2014, SoCG 2014 (2x), SEA 2014, ESA 2014 (4x), SODA 2015 (2x), STACS 2015 (2x), SoCG 2015 (3x), FOCS 2015, ESA 2015 (3x), SODA 2016 (3x), STOC 2016 (2x), SWAT 2016 (2x), ICALP 2016 (2x), COCOON 2016, FOCS 2016, ESA 2016 (2x), MFCS 2016 (2x), GD 2016, ISAAC 2016 (2x), SODA 2017, STOC 2017, CIAC 2017, SoCG 2017 (7x), CCC 2017, WADS 2017, FOCS 2017 (2x), FCT 2017, ISAAC 2017, WALCOM 2018, LATIN 2018 (2x), Ernst-Reuter-Preis 2017, SoCG 2018 (2x), ICALP 2018 (4x), SWAT 2018 (2x), SEA 2018, ESA 2018 (2x), ISAAC 2018, SODA 2018 (3x), SoCG 2019 (4x), EuroCG 2019 (2x), ESA 2019 (3x), RANDOM 2019 (2x), GD 2019 (2x), JCDCG^3 2018, SOSA 2020, CALDAM 2020, SoCG 2020 (5x), ICALP 2020 (4x), ESA 2020, SODA 2021 (4x), WADS 2021 (2x), SoCG 2022 (2x), SWAT 2022, SODA 2023, SOSA 2023, ITCS 2023
- Organization of Scientific Meetings: HA 65, BC 60, FUB-TAU Joint Research Workshop on Algorithms in Geometric Graphs 2017, EuroCG 2018, FUB-TAU Joint Research Workshop on Optimization in Graphs and Geometry 2019, 4th DACH Workshop on Arrangements and Drawings 2020, Rote-Alt-Fest 2021, CG-Week 2022
- Chair of the Computer Science Department (geschäftsführender Direktor), Fall 2013/14–now.
- Member of the council for the Institute of Computer Science (Institutssrat), FU Berlin, Fall 2013/14–now.
- Member of the council for the Department of Mathematics and Computer Science (Fachbereichsrat), FU Berlin, Spring 2011–Fall 2012/13, Spring 2017–Fall 2020/21, (substitute) Spring 2021–now.
- Substitute Member of the Extended Academic Council of FU Berlin, Fall 2013/14–Spring 2015.
- Representative of the Institute of Computer Science at the FU Berlin visit day for high-school students (inFU-Tage) 2011–2015.
- Interviewer for the selection of MSc students in Computer Science at FU Berlin in Fall 2012/13 and Fall 2013/14 (with Lutz Prechelt).
- Selection committee for the Dr. Hans Riegel-Fachpreise for computer science at FU Berlin 2016 and 2017.

Professional Memberships	ACM, ACM SIGACT, DMV, EATCS, GI
Technical Skills	Programming: C, C++, Pascal, Java, PHP, Haskell, UNIX shell scripting, SQL, x86 Assembler, Python
	Languages: German (native), English (Fluent), French (Intermediate), Spanish (Basic)