# Younan Gao

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## Education

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|---|---|
| Sept 2020 – August 2023 | **Ph.D. Computer Science, Dalhousie University, Canada**<br>Supervisor: *Prof. Meng He*<br>Thesis: Data Structures for Colored Counting in Grids and Trees<br>Defence Date: *August 18, 2023* |
| Sept 2018 – August 2020 | **M.Sc. Computer Science, Dalhousie University, Canada**<br>Supervisor: *Prof. Meng He*<br>GPA: 4.3/4.3<br>Thesis: Fast Preprocessing for Optimal Orthogonal Range Reporting and Range Successor with Applications to Text Indexing |
| Jan 2018 – August 2018 | **M.A.Sc. Applied Computer Science, Dalhousie University, Canada**<br>GPA: 4.15/4.3<br>Note: Transferred to M.Sc. in September 2018 |
| Sept 2008 – June 2012 | **B.Eng. Software Engineering, Dalian University of Technology, China**<br>GPA: 83/100 |

## Fields of Interest:

Computational Geometry, Data Structures and Algorithms, Distributed Algorithms, Pattern Matching

## Employment History

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| Sep 2024 – Present | **Postdoctoral Researcher** University of Milano-Bicocca, Italy<br>Supervisors: *Prof. Paola Bonizzoni* and *Prof. Gianluca Della Vedova* |
| Oct 2023 – Aug 2024 | **Postdoctoral Researcher** Université du Québec en Outaouais (UQO), Canada<br>Supervisor: *Prof. Andrzej Pelc* |
| Jan 2015 – June 2017 | **Network Technology Engineer** Huawei Technologies Co., Ltd.<br>Mexico City, Mexico/Cairo, Egypt/Douala, Cameroon |
| July 2012 – Dec 2014 | **Java Developer** Huawei Technologies Co., Ltd., Shenzhen, China |

## Submissions

**On Approximate Colored Path Counting**
An extended version of the paper published on LATIN2024
*Younan Gao, Meng He, and Gonzalo Navarro*
Under review by Theoretical Computer Science (journal)

## Research Publications

### Journal Articles

[1] Gao, Y., & Pelc, A. (2026). Gathering teams of bounded memory agents on a line. *Distributed Comput.*, *39*(2), 10. 🔗 doi:10.1007/S00446-025-00495-7

[2] Gao, Y., & Pelc, A. (2025). Sniffing helps to meet: Deterministic rendezvous of anonymous agents in the grid. *Theor. Comput. Sci.*, *1050*, 115395. 🔗 doi:10.1016/J.TCS.2025.115395

## Conference Proceedings

**1** Bonizzoni, P., Cozzi, D., & Gao, Y. (2026, to appear). Optimal-time mapping in run-length compressed pbwt. In *37th annual symposium on combinatorial pattern matching, CPM*.

**2** Bonizzoni, P., Gao, Y., & Riccardi, B. (2026, to appear). Constructing suffixient arrays revisited. In *37th annual symposium on combinatorial pattern matching, CPM*.

**3** Gao, Y., & He, M. (2024). On approximate colored path counting. In *Proceedings of the 16th Latin American Theoretical Informatics Symposium (LATIN)*. 🔗 doi:10.1007/978-3-031-55598-5_14

**4** Gao, Y., & Pelc, A. (2024). Gathering teams of deterministic finite automata on a line. In S. Bonomi, L. Galletta, E. Rivière, & V. Schiavoni (Eds.), *Proceedings of the 28th International Conference on Principles of Distributed Systems (OPODIS)* (Vol. 324, 11:1–11:17). 🔗 doi:10.4230/LIPICS.OPODIS.2024.11

**5** Gao, Y. (2023). Adaptive data structures for 2d dominance colored range counting. In *Proceedings of the 18th International Algorithms and Data Structures Symposium (WADS)*, **invited to a special issue of Computational Geometry: Theory and Applications**. 🔗 doi:10.1007/978-3-031-38906-1_30

**6** Gao, Y. (2022). Computing matching statistics on repetitive texts. In *Proceedings of the 32nd Data Compression Conference, (DCC)*. 🔗 doi:10.1109/DCC52660.2022.00015

**7** Gao, Y., & He, M. (2022). Faster path queries in colored trees via sparse matrix multiplication and min-plus product. In *Proceedings of the 30th Annual European Symposium on algorithms (ESA)*, **Accepted Rate: 31.8%** (59:1–59:15). 🔗 doi:10.4230/LIPIcs.ESA.2022.59

**8** Gao, Y., & He, M. (2021). Space efficient two-dimensional orthogonal colored range counting. In *Proceedings of the 29th Annual European Symposium on Algorithms (ESA)*, **Accepted Rate: 24.8%** (46:1–46:17). 🔗 doi:10.4230/LIPIcs.ESA.2021.46

**9** Gao, Y., He, M., & Nekrich, Y. (2020). Fast preprocessing for optimal orthogonal range reporting and range successor with applications to text indexing. In *Proceedings of the 28th Annual European Symposium on Algorithms (ESA)*, **Accepted Rate: 26.7%** (54:1–54:18). 🔗 doi:10.4230/LIPIcs.ESA.2020.54

## Talks

🔖 **Optimal-Time Mapping in Run-Length Compressed PBWT**
*Workshop Data Structures in Bioinformatics 2026, Venice, Italy*
Slides: https://web.cs.dal.ca/~younan/publications/move-pbwt.pdf

🔖 **Gathering Teams of Deterministic Finite Automata on a Line**
*The 28th International Conference on Principles of Distributed Systems, Lucca, Italy*
Slides: https://web.cs.dal.ca/~younan/publications/opodis_presentation

🔖 **Adaptive Data Structures for 2D Dominance Colored Range Counting**
*The 18th Algorithms and Data Structures Symposium, WADS 2023, Montreal, Canada*
Slides: https://web.cs.dal.ca/~younan/publications/wads_slides_2023

🔖 **Faster Path Queries in Colored Trees via Sparse Matrix Multiplication and Min-Plus Product**
*European Symposium on Algorithms, ESA 2022, Online*
Video: https://www.youtube.com/watch?v=Hd7KTmeNPiM

🔖 **Computing Matching Statistics on Repetitive Texts**
*Data Compression Conference, DCC 2022, Online*
Video: https://www.youtube.com/watch?v=mtsDq5hyBlU

🔖 **Space Efficient Two-Dimensional Orthogonal Colored Range Counting**
*European Symposium on Algorithms, ESA 2021, Online*
Video: https://www.youtube.com/watch?v=yGOjgFmhXSs

## Talks (continued)

🔖 **Fast Preprocessing for Optimal Orthogonal Range Reporting and Range Successor with Applications to Text Indexing**
*European Symposium on Algorithms, ESA 2020, Online*
Video: `https://www.youtube.com/watch?v=NElhHxCCYkg&t=228s`

## Marker/Teaching Assistant

🔖 **CSCI 6057/4117: Advanced Data Structures**
*Winter 2021, Winter 2022*

🔖 **CSCI 3110: Design and Analysis of Algorithms**
*Summer 2019, Fall 2019, Fall 2020, Summer 2021, Fall 2021, and Fall 2022*

🔖 **CSCI 2110: Data Structures and Algorithms**
*Winter 2022*

## Professional Service

🔖 **Subreviewers for CCCG2021, SPIRE2022, SEA2026, and SWAT2026**

🔖 **Organizers for CCCG2021, WADS2021, CPM2025**

## Skills

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| Coding | 🔖 Java, C/C++, php, Python, sql, xml, LaTeX, … |
| Databases | 🔖 Mysql. |
| Web Dev | 🔖 Html, css, JavaScript, Apache Web Server, Tomcat Web Server. |

## For references, please contact

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|---|---|
| Prof. Andrzej Pelc | **Position:** Professor at Université du Québec en Outaouais |
| | **Email:** pelc@uqo.ca |
| Prof. Meng He | **Position:** Professor at Dalhousie University |
| | **Email:** mhe@cs.dal.ca |
| Prof. Paola Bonizzoni | **Position:** Professor at University of Milano-Bicocca |
| | **Email:** paola.bonizzoni@unimib.it |