
Education

- 04/2017 to present **Postdoctoral Research Associate**, *Princeton University*, Princeton, NJ, US.
Topic: computational biology, cancer computational biology, and copy-number aberrations
Supervisor: Prof. Ben Raphael (Princeton University)
- 01/2014–04/2017 **PhD in Computer Science**, *University of Milano-Bicocca*, Milan, cum laude.
Topic: computational biology, cancer computational biology, fixed-parameter tractable algorithms, integer linear programming, data structures, tools for bioinformatics, and computational complexity
Title of the Thesis: *Inferring Genomic Variants and their Evolution: Combinatorial Approaches for Reconstructing Haplotypes and Copy-Number Aberrations in Normal and Cancer Genomes*
Supervisors: Prof. Paola Bonizzoni and Prof. Ben Raphael (Brown University)
- 11/2011–07/2013 **Master's Degree in Computer Science**, *University of Milano-Bicocca*, Milan, 110/110 summa cum laude.
Notes: I received the maximum grade in each course at the Master (30 cum laude)
Title of the Thesis: *Indel Reversal Distance*
Supervisors: Prof. Jens Stoye (University of Bielefeld) and Prof. Paola Bonizzoni
- 10/2008–09/2011 **Bachelor's degree in Computer Science**, *University of Milano-Bicocca*, Milan, 110/110 summa cum laude.
Title of the Thesis: *Inferenza di aplotipi in pedigree multiallelici tramite risolutori SAT (Haplotype inference on multiallelic pedigree via SAT solvers)*
Supervisors: Prof. Paola Bonizzoni and Dr. Yuri Pirola

Publications (Peer-reviewed)

Journal

- 1 S. Zaccaria[†], M. El-Kebir[†], G. W. Klau, and B. J. Raphael. *Phylogenetic Copy-Number Factorization of Multiple Tumor Samples*, *Journal of Computational Biology* 25: 7 (2018).
- 2 M. El-Kebir, B. J. Raphael, R. Shamir, R. Sharan, S. Zaccaria, M. Zehavi, R. Zeira. *Complexity and Algorithms for Copy-Number Evolution Problems*, *Algorithms on Molecular Biology* 12 (1), 13 (2017), *.
- 3 P. Bonizzoni, R. Dondi, G. W. Klau, Y. Pirola, N. Pisanti, S. Zaccaria. *On the Minimum Error Correction Problem for Haplotype Assembly in Diploid and Polyploid Genomes*, *Journal of Computational Biology* 23(9): 718-736 (2016), *.
- 4 Y. Pirola[†], S. Zaccaria[†], R. Dondi, N. Pisanti, G. W. Klau, P. Bonizzoni. *HAPCOL: Accurate and Memory-efficient Haplotype Assembly from Long Reads*, *Bioinformatics* 32(11): 1610-1617 (2016).
- 5 E. Willing, S. Zaccaria, M. D. V. Braga, and J. Stoye. *On the inversion indel distance.*, *BMC Bioinformatics*, 14(S-15): S3 (2013), *.
This paper has been presented to the international peer-reviewed conference RECOMB CG 2013

Conference

- 1 S. Zaccaria[†], M. El-Kebir[†], G. W. Klau, and B. J. Raphael. *The Copy-Number Tree Mixture Deconvolution Problem and Applications to Multi-sample Bulk Sequencing Tumor Data*, *RECOMB 2017*: 318-335.

- 2 M. El-Kebir, B. J. Raphael, R. Shamir, R. Sharan, S. Zaccaria, M. Zehavi, R. Zeira. *Copy-number evolution problems: complexity and algorithms*, WABI 2016: 137-149, *.
- 3 P. Bonizzoni, R. Dondi, G. W. Klau, Y. Pirola, N. Pisanti, S. Zaccaria. *On the Fixed Parameter Tractability and Approximability of the Minimum Error Correction Problem*, CPM 2015, 100 - 113, *.

Notes

- o † Joint First Authors.
- o * The marked papers follow the traditional convention of publications in theoretical computer science where the authors are listed in alphabetical order and does not reflect the contribution.

Talks

- 1 **HATCHet: Inference of Allele and Clone-specific Copy-Number Aberrations in Tumor Samples.**, RECOMB CCB 2018, The 22st Annual International Conference on Research in Computational Molecular Biology, April 19-20, Paris.
- 2 **The Copy-Number Tree Mixture Deconvolution Problem and Applications to Multi-sample Bulk Sequencing Tumor Data.**, RECOMB 2017, The 21st Annual International Conference on Research in Computational Molecular Biology, May 3-7, Hong Kong.
- 3 **Copy-Number Evolution Problems: Complexity and Algorithms.**, WABI 2016, International Workshop on Algorithms in Bioinformatics, August 21-23, Aarhus, Denmark.
- 4 **On the inversion-indel distance.**, PRIN 10-11 meeting, November 28-29, 2015. Politecnico di Milano, Milan, Italy.
- 5 **HAPCOL: Faster and memory-efficient Haplotype Assembly for Future-Generation-Reads.**, BITS 2015, Twelfth Annual Meeting of the Bioinformatics Italian Society, June 3-5, 2015. Milan, Italy.
- 6 **On the Fixed Parameter Tractability and Approximability of the Minimum Error Correction problem.**, CPM 2015, 26th Annual Symposium on Combinatorial Pattern Matching, June 29-July 1, 2015. Ischia Island, Italy.

Posters

- 1 Simone Zaccaria and Ben Raphael. **HATCHet: Inference of Allele and Clone-specific Copy-Number Aberrations in Tumor Samples**, TCGA Legacy, September 27-29, 2018. Washington DC, USA.
- 2 Simone Zaccaria and Ben Raphael. **HATCHet: Inference of Allele and Clone-specific Copy-Number Aberrations in Tumor Samples**, RECOMB 2018, April 21-24, 2018. Paris.
- 3 Simone Zaccaria and Ben Raphael. **Inference of Allele and Clone-specific Copy-Number Aberrations in Tumor Samples**, Cancer Genomics and Mathematical Data Analysis Symposium, February 7-8, 2018. Columbia University, NYC.
- 4 Simone Zaccaria, Yuri Pirola, Riccardo Dondi, Gunnar W. Klau, Nadia Pisanti, and Paola Bonizzoni. **HAPCOL: Faster and memory-efficient Haplotype Assembly for Future-Generation-Reads**, HiTSeq (ISMB) 2015, Conference on High Throughput Sequencing, Algorithms and Applications, July 10-11, 2015. Dublin, Ireland.
- 5 Simone Zaccaria, Yuri Pirola, Riccardo Dondi, Gunnar W. Klau, Nadia Pisanti, and Paola Bonizzoni. **HAPCOL: Faster and memory-efficient Haplotype Assembly for Future-Generation-Reads**, BITS 2015, Twelfth Annual Meeting of the Bioinformatics Italian Society, June 3-5, 2015. Milan, Italy.

Program committees

- 1 **Extended program committee**, 15th European Conference on Computational Biology, September 3-7, 2016, The Hague, Netherlands.

Reviews

Journal

- 1 **International Journal of Bioinformatics Research and Applications (IJBRA)**.
- 2 **Journal of Combinatorial Optimization (JOCO)**.
- 3 **Communications Biology**.

Conference

- 1 **ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB' 2017)**.
- 2 **13th International Symposium on Bioinformatics Research and Applications (ISBRA 2017)**.
- 3 **17th Workshop on Algorithms in Bioinformatics (WABI 2017)**.
- 4 **2017 International Conference on Computational Science (ICCS 2017)**.
- 5 **20th Annual International Conference on Research in Computational Molecular Biology (RECOMB 2016)**.
- 6 **26th International Workshop on Combinatorial Algorithms (IWOCA 2015)**.

Visiting

- 10/2016–
11/2016 **Princeton University**, Princeton, NJ, US.
Research Visit.
- 11/2015–
07/2016 **Brown University**, *Visiting Graduate Student*, Providence, RI, US.
Supervised by prof. Ben Raphael.
- 07/2015 **CWI**, Amsterdam, Netherlands.
Research Meeting.
- 03/2013–
07/2013 **University of Bielefeld**, *Research Fellow*, Bielefeld, Germany.
Supervised by Prof. Jens Stoye.

Work Experiences

- 10/2016–
02/2017 **University of Milano-Bicocca**, *Teaching Assistant*, Milan, Italy.
Teacher assistant for the course of Programming of the bachelor degree in Computer Science
- 10/2015–
02/2016 **University of Milano-Bicocca**, *Teaching Assistant*, Milan, Italy.
Teacher assistant for the course of Programming of the bachelor degree in Math
- 10/2014–
02/2015 **University of Milano-Bicocca**, *Teaching Assistant*, Milan, Italy.
Teacher assistant for the course of Programming of the bachelor degree in Computer Science
- 02/2012–
07/2012 **University of Milano-Bicocca**, *Teaching Tutor*, Milan, Italy.
Teaching tutor for the courses of Algorithms and Operative Research of the bachelor degree
- 09/2008–
10/2008 **Persico S.p.a.**, *Internship*, Nembro (Bergamo), Italy.
Internship to the administration office for network and IT management.

Schools

- 09/2014 **International School on Graph Theory, Algorithms and Applications**, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy.
Directors: Prof. R. Cerulli, Prof. A. Goldberg, Prof. G. F. Italiano, and Prof. R. E. Tarjan
- 06/2014 **Summer School on Advanced Approximation Algorithms**, Institute of Theoretical Computer Science (ETH), Zurich. Teacher: Prof. Fabrizio Grandoni

Grants

- 05/2013 **Franco Belli Journalist's Memory Grant**, University of Milano-Bicocca.
- 05/2012 **Exchange program**, University of Milano-Bicocca.
- 03/2012 **EXTRA Plus Program**, University of Milano-Bicocca and Cariplo foundation.