CURRICULUM VITAE · MIKKO KOIVISTO   SEPTEMBER 4, 2022
Department of Computer Science, P.O.Box 68, 00014 University of Helsinki, Finland
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CURRICULUM VITAE

Name and year of birth

Mikko Kalle Henrik Koivisto, 1974

Degrees, dates and places, major subject, topic of doctoral dissertation

Ph.D. (computer science), University of Helsinki, Mar 2004.
Thesis title: *Sum-Product Algorithms for the Analysis of Genetic Risks.*
Supervisor: Heikki Mannila.
M.Sc. (computer science), University of Helsinki, Sep 1995–Nov 2001.

Adjunct professorships, universities, years of appointments

title of docent, adj. prof. (computer science), University of Helsinki, Jan 2009.

Present employment relationship

Professor of Computer Science, Dept. of Computer Science, University of Helsinki,
Aug 2019–.

Most important previous employment relationships

Associate Professor, Dept. of Computer Science, University of Helsinki,
Aug 2016–July 2019.

Assistant Professor, Dept. of Computer Science, University of Helsinki,
Jan 2013–July 2016. (*Leave for Academy Research Fellowship Jan 2013–Aug 2013.*)

Academy Research Fellow,
Academy of Finland / University of Helsinki,
Aug 2008–Aug 2013. (*6-month parental leave May 2008–Oct 2008.*)

Postdoctoral Researcher,
HIIT Basic Research Unit, Dept. of Computer Science, University of Helsinki,
Aug 2005–July 2008. (*6-month parental leave Jan 2007–June 2007.*)

Postdoctoral Researcher,
From Data to Knowledge CoE, Dept. of Computer Science, University of Helsinki,
July 2004–July 2005.

Researcher,
Laboratory of Computer and Information Science, Helsinki University of Technology,
Jan 2001–June 2004.

Researcher (part time),
Locus Portal Corporation, Helsinki, Finland,
Sep 2001–Sep 2003.

Most important visits abroad

Participation in invitation-based seminars, workshops, and meetings: *Dagstuhl seminars*
about exponential algorithms and complexity (October 2008, October 2010, August 2013),
First Symposium on Structure in Hard Combinatorial Problems (May 2013), NII Shonan
Seminar "Towards the Ground Truth: Exact algorithms for Bioinformatics Research" (March

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2014), *Lorentz Center Workshop* "Enumeration Algorithms Using Structure" (August 2015), *Simons Institute for the Theory of Computing*, "Fine-Grained Complexity and Algorithm Design" (Fall 2015, long-term participant). Several visits to research groups abroad. Attended numerous international scientific conferences.

Most important scientific and academic administrative positions

Director of the Master's Programme in Computer Science, University of Helsinki, 2021–.

Board member of the Master's Programme in Computer Science, University of Helsinki, 2016–.

Board member of the Master's Programme in Theoretical and Computational Methods, University of Helsinki, 2016–2022.

Member of the Docent Committee of the Faculty of Science, University of Helsinki, 2020–2022.

Co-chair of organizing committee, Symposium on Computer Science in Finland 2017.

University of Helsinki coordinator of the Life Science Informatics track in the Helsinki Doctoral Education Network in Information and Communications Technology (HICT), Jan 2016–.

Acting professor responsible for the Master's degree programme in Bioinformatics (MBI) (substituting Prof. Veli Mäkinen on his sabbatical), Sep 2013–Aug 2014.

Member of organizing committee, Scandinavian Workshop on Algorithm Theory 2012 (SWAT'12).

Member of organizing committee, European Conference on Logics in Artificial Intelligence 2010 (JELIA'10).

Most important scientific acknowledgements and awards, memberships in science academies

The Best Student Paper Award at UAI 2019 (w/ T. Talvitie and A. Vuoksenmaa).

The runner up for the Best Student Paper Award at UAI 2009 (w/ P. Parviainen).

Researcher of the Year award 2008 by the Dept. of Computer Science, University of Helsinki, 2008.

Pro Gradu prize (for an outstanding M.Sc. thesis) by the Faculty of Science, University of Helsinki, 2001.

Most important research funding

PI of *Adaptive techniques for approximate counting*, Academy of Finland, Sep 2018–Aug 2022, € 497 884.

PI of *Supple exponential algorithms*, Academy of Finland, Sep 2014–Aug 2018, € 426 476.

PI of *Algorithmics in data analysis: basic research and applications*, Academy of Finland, Aug 2008–Oct 2013. Grants for an Academy Research Fellow, € 195 870, € 255 411, and € 104 994.

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PI of *Algorithmic Bayesian data analysis with application in bioinformatics*,
Academy of Finland, Aug 2005–July 2008.
A grant for a postdoctoral researcher, € 156 090.

Funded position in the doctoral programme Hecse, 2002–2004.
(Exact dates and the amount of funding missing.)

Research leadership and supervised doctoral dissertations

Leader of a research group, Dept. of Computer Science, University of Helsinki, Aug 2008–.

Supervision of nine doctoral dissertations:

Juha Harviainen 2021– (expected 2024)
Jussi Viinikka 2020– (expected 2023)
Topi Talvitie 2016–2019 *with distinction* (co-advisor Valentin Polischuck)
Juho-Kustaa Kangas 2013–2017 *with distinction* (co-advisor Matti Järvisalo)
Teppo Niinimäki 2011–2015 *with distinction*
Janne Korhonen 2009–2014 *with distinction* (co-advisor Petteri Kaski)
Esther Galbrun 2009–2013 (co-advisor Hannu Toivonen)
Pekka Parviainen 2008–2012
Jussi Kollin 2006–2010 (co-advisor Heikki Mannila)

All at the Dept. of Computer Science of University of Helsinki, where
around 15 % of doctoral dissertations are accepted *with distinction*.

Other scientific expert positions and scientific achievements
Memberships and positions in trust in scientific communities
Chairman of the Finnish Society for Computer Science, 2018–2020.
Vice-chairman of the Finnish Society for Computer Science, 2016–2017.
Board member of the Finnish Society for Computer Science, 2015–2020.

Editor of a scientific journal
Associate Editor of the Journal of Artificial Intelligence Research (JAIR), 2019–.

Referee of 29 scientific journals
ACM Transactions on Algorithms; Algorithmica; Algorithms;
Artificial Intelligence in Medicine; Bioinformatics; BMC Genetics;
Computational Statistics & Data Analysis; Computers and Operations Research;
Data Mining and Knowledge Discovery; Discrete Applied Mathematics;
Engineering Applications of Artificial Intelligence;
European Journal of Human Genetics;
IEEE/ACM Transactions on Computational Biology and Bioinformatics;
IEEE Transactions on Pattern Analysis and Machine Intelligence;
Information and Computation; Information Processing Letters;
International Journal of Approximate Reasoning;
International Journal of Information Technology & Decision Making;
Journal of Computer and System Sciences;
Journal of Computational and Graphical Statistics; Journal of Discrete Algorithms;
Journal of Experimental Algorithms;
Journal of Artificial Intelligence Research; Journal of Machine Learning Research;
Journal of the ACM; Machine Learning; Mathematical Programming;
SIAM Journal on Computing; Statistics and Computing; Theoretical Computer Science.
(*Around 4–6 reviews a year in total.*)

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Preliminary examiner or opponent of doctoral dissertations
> Pre-examiner of Johan Pensar's Ph.D. thesis, Åbo Academy, 2016.
> Pre-examiner of Lauri Ahlroth's D.Sc.(Tech.) thesis, Aalto University, 2012.

International peer review of funding applications
> ERC starting grant application, European Research Commission, 2011.
> Funding application, the French National Research Agency, 2019, 2021.
> Funding application, the Austrian Science Fund, 2013.
> Funding application, the Netherlands Organisation for Scientific Research, 2010.
> Several applications for positions in national doctoral programmes, 2009–2015.

Member of program committee for scientific conferences
> AAAI Conf. on Artificial Intelligence (AAAI), 2018–2020;
> Advances in Neural Inform. Process. Syst. (NIPS/NeurIPS), 2013, 2014, 2016, 2020;
> European Conf. on Artificial Intelligence (ECAI), 2008, 2012;
> The European Conf. on Machine Learning and Principles and Practice of
>   Knowledge Discovery in Databases (ECML PKDD), 2012;
> European Symp. on Algorithms (ESA), 2010;
> Internat. Computer Science Symp. in Russia (CSR), 2018;
> Internat. Conf. on Artificial Intelligence and Statistics (AISTATS), 2017, 2018, 2019.
> Internat. Conf. on Machine Learning (ICML), 2013–2016;
> Internat. Joint Conf. on Artif. Intell. (IJCAI), 2015, *Senior PC* in 2018–2022;
> Internat. Symp. on Parameterized and Exact Computation (IPEC), 2012, 2015;
> Probabilistic Graphical Models (PGM), 2010, 2012, 2016, 2018, 2020, 2022;
> Scandinavian Workshop on Algorithm Theory (SWAT), 2008;
> Uncertainty in Artif. Intell. (UAI), 2008, 2010–2021, *Senior PC* in 2013, 2020, 2021;

Referee or subreferee for scientific conferences, when not in the PC
> AISTATS'07; ALT'05; CPM'05, '09; CSR'21; ECAI'04, '12; ESA'15, '16; FOCS'17;
> ICALP'09, '16, '19; IJCAI'15; IPEC'13; IWOCA'16; LATIN'15, '18; MFCS'13, '16, '21;
> PSB'05, '06; RECOMB'06, '07; SODA'19, '21; STACS'13; SWAT'20; UAI'06;
> WABI'04; WADS'13; WG'10, '14.

Scientific impact of research

> **Publications at top conferences**: FOCS, STOC, SODA, ICALP, ESA, STACS, COLT;
> ICML, NIPS/NeurIPS, UAI, AISTATS, IJCAI, AAAI.

> **Citation statistics** according to Google Scholar (as of Sep 4, 2022):

> − Citations: **3035**. H-index: *25*.

> − Exact Bayesian structure discovery in Bayesian networks, *Journal of Machine Learning Research, 2004* (M. Koivisto, K. Sood): **488**.

> − Set partitioning via inclusion-exclusion, *SIAM Journal on Computing, 2010* (A. Björklund, T. Husfeldt, M. Koivisto): **397**.

> − Fourier meets Möbius: fast subset convolution, *STOC 2007* (A. Björklund, T. Husfeldt, P. Kaski, M. Koivisto): **355**.