Curriculum Vitae - Veli Mäkinen

Veli Mäkinen is Professor of Computer Science at the University of Helsinki. He heads the Genome-scale algorithmics research group and is the Director of the Master's Programme in Computer Science. He has supervised four PhD theses and tens of Master's theses. He is currently supervising two PhD theses. Veli Mäkinen started his career in string algorithms and compressed data structures. As of 2018, he has over 100 publications on these and related topics, with the focus being shifted towards algorithmic bioinformatics, where different high-throughput sequencing data analysis scenarios make near-linear time algorithms that work in small space an appealing target of study. Inspired by this new angle to bioinformatics algorithms, Veli Mäkinen co-authored a textbook on Genome-scale Algorithm Design: Biological Sequence Analysis in the Era of High-Throughput Sequencing, published by Cambridge University Press, 2015. The new textbook works as the main material for two algorithmic bioinformatics courses taught frequently by Veli Mäkinen. He also teaches the general algorithms courses Design and Analysis of Algorithms, String Processing Algorithms, Data Compression Techniques, and projects and seminars related to these topics. Some current research interests include studying algorithms and computational complexity when moving from sequences to variation graphs in (pan-)genomics, and studying applications of different index structures related to the variants of the Burrows-Wheeler transform. Besides research and teaching, Veli Mäkinen has an active role in the research community. Some recent activities include co-chairing IWOCA 2016 and guest editing a special issue for Theory of Computing Systems, program committee memberships (WABI 2018, RECOMB 2019, MFCS 2016), and a keynote talk at the ECCB 2016 workshop on Computational Pan-Genomics.