

## Data Management Strategies for Space-Efficient Decoding and Planning



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### Abstract

Several key computer science tasks are traditionally solved via dynamic programming and need to work within the constraints of low-memory devices. This talk presents two solutions that enhance space-efficiency in such tasks. First, we will show how to achieve space-efficient Viterbi decoding, used in speech recognition and probabilistic context-free grammar parsing. Second, we will outline how to make optimal planning decisions space-efficiently in a finite-horizon Markov Decision Process. Thereby, we will showcase how data management expertise can deliver solutions in other domains. Lastly, we will glimpse into alternative time-efficient strategies for those problems.

### About the Speaker

Prof. Panagiotis Karras is a professor of computer science with the University of Copenhagen. His research interests include designing robust and versatile methods for data access, mining, analysis, and representation. He received the MSc degree in electrical and computer engineering from the National Technical University of Athens and the PhD degree in computer science from the University of Hong Kong. He was the recipient of the Hong Kong Young Scientist Award, the Singapore Lee Kuan Yew Postdoctoral Fellowship, the Rutgers Business School Teaching Excellence Fellowship, and the Skoltech Best Faculty Performance Award. His work has been published in PVLDB, SIGMOD, ICDE, KDD, AAAI, IJCAI, NeurIPS, ICLR, USENIX Security, TheWebConf, SIGIR, ACL, and INTERSPEECH.