Seminar

ECU COMPUTER SCIENCE

Unsupervised Rank Aggregation using Parametrized Function Optimization

Abstract. We propose a novel unsupervised rank aggregation method using parameterized function optimization (PFO). This algorithm derives a parameterized rank aggregation model by minimizing the energy of weighted standard deviations of rank lists associated with different rankers or attributes. Parameters, in this problem, are weights representing the impact of rank lists on the final aggregated rank. The proposed method is efficient (linear time complexity) and its accuracy favorably compares with pairwise preference methods (with polynomial time complexity). Two rounds of experiments are run to show the success of PFO in rank aggregation: one on the LETOR benchmark dataset to show its success in unsupervised rank aggregation and the other on three university ranking datasets to solve a practical problem in education. The experimental results on the LETOR show that PFO significantly outperforms the baseline results and show promising performances in comparison with recent high performance methods developed for unsupervised rank aggregation. The university ranks obtained by our model compare favorably with the ranks reported by well-known organizations. Success of the PFO model for performing unsupervised rank aggregation, specifically on practical problems, supports the use of the algorithm in difficult ranking scenarios without ground truth.

Biography. Dr. Vijay Raghavan is the Alfred and Helen Lamson Endowed Professor of Computer Science at the Center for Advanced Computer Studies, University of Louisiana at Lafayette, the Director of the Center for Visual and Decision Informatics, a multi-institutional, NSF-sponsored, Industry University Research Center (IUCRC), and a co-director of the Laboratory for Internet Computing. His research interests are in information retrieval and extraction, data and web mining, multimedia retrieval, data integration, and link discovery. He has published around 300 peer-reviewed research papers (https://www.researchgate.net/profile/Vijay_Raghavan10), has served as major adviser for 31 doctoral students and has garnered $15 million in external funding. Raghavan is an IEEE Life Senior Member and an ACM Distinguished Scientist.

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Time: 2:00 – 2:50pm
Room: Bate 1021

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