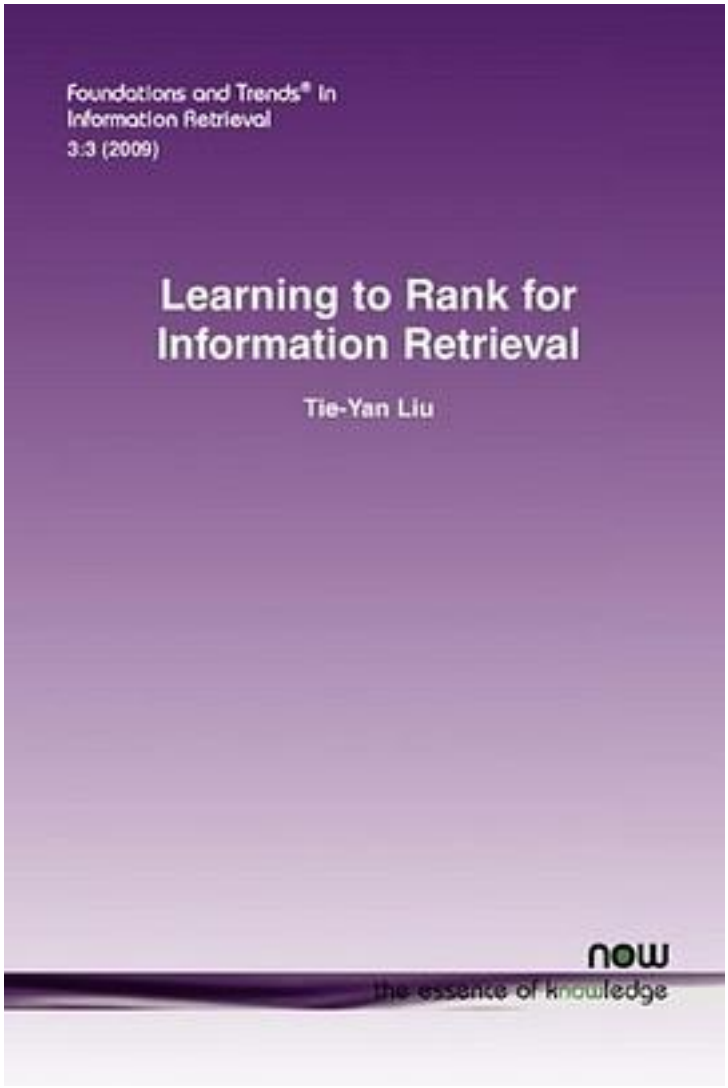
Learning to Rank for Information Retrieval



Learning to Rank for Information Retrieval_下载链接1_

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Due to the fast growth of the Web and the difficulties in finding desired information, efficient and effective information retrieval systems have become more important than ever, and the search engine has become an essential tool for many people.

The ranker, a central component in every search engine, is responsible for the matching between processed queries and indexed documents. Because of its central role, great attention has been paid to the research and development of ranking technologies. In addition, ranking is also pivotal for many other information retrieval applications, such as collaborative filtering, definition ranking, question answering, multimedia retrieval, text summarization, and online advertisement. Leveraging machine learning technologies in the ranking process has led to innovative and more effective ranking models, and eventually to a completely new research area called “learning to rank”.

Liu first gives a comprehensive review of the major approaches to learning to rank. For each approach he presents the basic framework, with example algorithms, and he discusses its advantages and disadvantages. He continues with some recent advances in learning to rank that cannot be simply categorized into the three major approaches these include relational ranking, query-dependent ranking, transfer ranking, and semisupervised ranking. His presentation is completed by several examples that apply these technologies to solve real information retrieval problems, and by theoretical discussions on guarantees for ranking performance.

This book is written for researchers and graduate students in both information retrieval and machine learning. They will find here the only comprehensive description of the state of the art in a field that has driven the recent advances in search engine development.

作者介绍:

Tie-Yan Liu is a lead researcher at Microsoft Research Asia. He leads a team working on learning to rank for information retrieval, and graph-based machine learning. So far, he has more than 70 quality papers published in referred conferences and journals, including SIGIR(9), WWW(3), ICML(3), KDD, NIPS, ACM MM, IEEE TKDE, SIGKDD Explorations, etc. He has about 40 filed US / international patents or pending applications on learning to rank, general Web search, and multimedia signal processing. He is the co-author of the Best Student Paper for SIGIR 2008, and the Most Cited Paper for the Journal of Visual Communication and Image Representation (2004~2006). He is an Area Chair of SIGIR 2009, a Senior Program Committee member of SIGIR 2008, and Program Committee members for many other international conferences, such as WWW, ICML, ACL, and ICIP. He is the co-chair of the SIGIR workshop on learning to rank for information retrieval (LR4IR) in 2007 and 2008. He has been on the Editorial Board of the Information Retrieval Journal (IRJ) since 2008, and is the guest editor of the special issue on learning to rank of IRJ. He has given tutorials on learning to rank at WWW 2008 and SIGIR 2008. Prior to joining Microsoft, he obtained his Ph.D. from Tsinghua University, where his research efforts were devoted to video content analysis.

目录:

标签

信息检索

机器学习

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Ranking

LTR

数据挖掘

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评论

受益匪浅

做ranking前的知识储备

搞learning to rank的必看。很新，很全

理论部分跳过了，书还是不错的

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书评

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