Extreme Classification: Tagging on Wikipedia, Recommendation on Amazon & Advertising on Bing

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ABSTRACT

I will introduce extreme classification which is a new area of machine learning research focusing on multi-class & multi-label problems involving millions of categories. Extreme classification has opened up a new paradigm for thinking about key applications such as tagging, ranking and recommendation. I will discuss algorithms for some of these applications and present results on tagging on Wikipedia, product recommendation on Amazon and search and advertising on the Bing search engine. More details can be found on The Extreme Classification Repository webpage at <http://manikvarma.org/downloads/XC/XMLRepository.html>

KEYWORDS

Extreme classification, search advertising, product recommendation, tagging

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1 AUTHOR BIO

Manik Varma is a Principal Researcher at Microsoft Research India and an Adjunct Professor of computer science at the Indian Institute of Technology (IIT) Delhi. His research interests lie in the

areas of machine learning, computational advertising and computer vision. Classifiers that he has developed have been deployed on millions of devices around the world and have protected them from viruses and malware. His algorithms are also generating millions of dollars on the Bing search engine (up to sign ambiguity). In 2013, he and John Langford coined the term extreme classification and found that they had inadvertently started a new area in machine learning. Today, by happenstance, extreme classification is thriving in both academia and industry with Manik's classifiers being used in various Microsoft products as well as in the wider tech sector. Manik recently proclaimed "2 KB (RAM) ought to be enough for everybody" prompting the media in the US, India, China, France, Belgium and Singapore to cover his research and compare him to Bill Gates (unfair, Manik's more handsome!). Manik has been awarded the Microsoft Gold Star award, the Microsoft Achievement award, won the PASCAL VOC Object Detection Challenge and stood first in chicken chess tournaments and Pepsi drinking competitions. He has served as an area chair/senior PC member for machine learning, artificial intelligence and computer vision conferences such as AAAI, CVPR, ICCV, ICML, IJCAI and NIPS and is serving as an associate editor of the IEEE PAMI journal. Manik is also a failed physicist (BSc St. Stephen's College, David Raja Ram Prize), theoretician (BA Oxford, Rhodes Scholar), engineer (DPhil Oxford, University Scholar), mathematician (MSRI Berkeley, Post-doctoral Fellow) and astronomer (Visiting Miller Professor, UC Berkeley).

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