Scaling and Democratizing Learning with Data

ABSTRACT:
In traditional and also much contemporary education, physical textbooks and classroom instructors assume primary responsibility for constructing learning pathways to the frontiers of knowledge. The two key roles played by these actors are 1) generation of learning sequences (curricula) and 2) generation of assessment content (tests). Manual curation, however, increasingly presents a bottleneck with the rapidly expanding content in the increasingly knowledge-demanding fields. In this talk I will outline two challenges and solutions towards democratizing learning via data-driven methods for 1) scalable and sustainable generation of assessment content and 2) automated and personalized curriculum generation. I will then introduce my ongoing work towards the vision of "web-scale curriculum mining" where the entirety of educational content on the web (peer-reviewed articles, lecture notes, tutorials, slides, but also less traditional media like videos, blogs and technical forums) becomes the substrate for a web-scale "personal classroom".

BIO:
Igor Labutov is a PhD candidate at Cornell University. His PhD research focuses on developing machine learning models for interactive applications, mostly in problems in education. Prior to Cornell, he received his BS in Electrical and Computer Engineering from The City College of New York. His long-term goal is to develop the next generation lifelong learning tools that leverage all of the web.

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