

# Taking Machine Learning to the Next Level



Yisong Yue

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## CURRENT RESEARCH

### Building autonomous systems that learn from humans

In this the "Information Age", we are constantly engaging with computer systems to perform an increasing number of tasks, a large portion of which is searching for and making sense of information of various sorts. But while the amount of data available has been growing (quickly), human attention has not. So it behooves us to build computer systems that can predict what we're interested in so as to help us make best use of our limited time. Dr. Yisong Yue of Caltech is interested in developing such approaches based on the principles of machine learning. Merging disciplines like Statistics, Computer Science, Optimization, and other disciplines to build smarter systems, machine learning is an important process as it converts data and experience into actual knowledge that can then be used to create sound predictive models. For example, Facebook predicts which news items to show on our news feed based on our activity, while Google predicts which search results to display when we type in a keyword. Machine learning therefore plays a large role in all of these systems, as well as in systems that people don't experience in their day-to-day lives. Dr. Yue, aims to push the limits of machine learning capabilities and develop more intelligent systems and tools for people to organize and digest information.

Apart from daily human-and-web interactions, machine learning is also crucial for anyone requiring analysis of large data sets. For example, most areas of sciences are now entering the era of big data sets, and machine learning can be useful in processing such datasets. For instance, one might, in principle, be able to use the vast amount of previous experimental results to predict which new...

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## AFFILIATION



California Institute of Technology

## EDUCATION

- Ph.D. in Computer Science 2010, Cornell University
- B.S. in Computer Science 2005, University of Illinois at Urbana-Champaign

## AWARDS

- Microsoft Research Graduate Fellowship, 2008-2010
- Google Student Award Winner, NYAS Machine Learning Symposium, 2009
- Yahoo! Key Scientific Challenges Award, 2008
- Outstanding TA Award, Cornell Department of Computer Sciences, 2006, 2007
- Dean's List, UIUC College of Engineering, 2002, 2003, 2004, 2005

## RESEARCH AREAS

Technology, Computational Sciences / Mathematics, Informational Sciences / Internet, IOT, Devices, Data

## FUNDING REQUEST

Your contributions will help support the research of Dr. Yisong Yue and his team at Caltech as they continue to advance computing and mathematical sciences and develop tools for smarter machine learning systems. Every project requires approximately \$85K a year, covering costs of travel for cross-institution collaboration, computing, and most importantly personnel. By donating, you can help facilitate advancements in not only information technology but also other disciplines that these tools will enable.