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L@S 2016

Proceedings of the Third (2016) ACM Conference on
Learning @ Scale

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Learning at Scale 2016 Preface

It is our great pleasure to present the Proceedings of the Third Annual ACM Conference on Learning at Scale, L@S 2016, held on April 25-26 at the University of Edinburgh, UK, the first time for the conference to be held outside of North America.

This conference series is a venue for discussion of the highest quality research on how learning and teaching can be transformed when done at scale. This conference was created by the Association for Computing Machinery (ACM), inspired by the emergence of Massive Open Online Courses (MOOCs) and the accompanying shift in thinking about education. This area of research is interdisciplinary, sitting at the intersection of the learning sciences, education, computer science, educational data mining, and learning analytics.

“Learning at Scale” refers to new approaches to teaching and learning that involve large numbers of students, thousands or even tens of thousands. It covers face-to-face settings as well as settings in which learners work remotely, whether synchronous or asynchronous. It is concerned with the challenges and affordances of scale: What are innovative forms of learning and instruction that can be orchestrated with very large numbers of learners? Specific topics include, but are not limited to: Pedagogies that enhance learning as scale; personalization and adaptation of learning at scale; self- and co-regulation of learning at scale; platforms, tools, and architectures for learning at scale; usability studies; tools for automated feedback and grading; learning analytics; analysis of log data; studies of application of learning theory; and finally, investigation of student behavior and correlation with learning outcomes, depth and retention of learning, and motivational and affective outcomes.

The call for papers attracted submissions from all over the world, covering a broad range of topics from the theoretical to the pragmatic. All papers were reviewed according to stringent criteria. Full Papers were reviewed by at least three program committee members, Work-In-Progress Papers and Demo Descriptions by two. Final decisions for acceptance of Full Papers were made by the program committee as a whole, often after extensive discussion of the merits of the paper. Whereas Full Papers present work that is innovative and mature, WiPs and Demos offer a forum for the newest and emerging work at earlier stages, offering pointers to future directions. As such, they fulfill a key role in this fast moving area. An industry session reflects the importance of L@S for the commercial world and for real world deployment.

As may be clear from the following analytics, the conference is highly selective in the work it accepts.

	Full Papers	Work in Progress	Demos
Submitted	79	66	8
Accepted	18	39	7
Accepted as Poster	24		
Acceptance Rate	23%	59%	88%

The overall submission numbers did not differ substantially from those of the previous year. Thus, the conference is successfully migrating from the continent of its birth, indicating its international relevance. How could it be different, as Learning at Scale is a truly international phenomenon?

We are fortunate to have three outstanding keynote speakers. Sugata Mitra, Professor of Educational Technology and Newcastle University, UK and winner of the 2013 TED Prize presents on “The

Future of Learning.” Mike Sharples, Chair in Educational Technology, Institute of Educational Technology at The Open University, UK will share insights on “Effective Pedagogy at Scale, Social Learning and Citizen Inquiry.” Ken Koedinger, Professor of Human Computer Interaction and Psychology, Director, Pittsburgh Science of Learning Center at Carnegie Mellon University, USA presents the final keynote, shared with the co-located Learning Analytics & Knowledge Conference on the topic, “Practical Learning Research at Scale.”

Learning@Scale 2016 and edX.org introduce a new interactive format for conference sessions, namely, flipped sessions. Research shows that a flipped format of instruction is effective – in this format, classroom sessions are used for active learning and less interactive forms of learning are done at home. However, most conferences still preserve the decades-old format of mini lectures... Not anymore! Learning@Scale 2016 features flipped conference sessions. Authors of accepted papers, posters, and demos were invited to create online resources, “mini courses,” for their contributions, to be hosted by edX. Conference participants familiarize themselves with these resources ahead of the conference. During the session, they discuss the papers and develop relevant themes and ideas based on these papers. After the conference, the platform will remain available for on-going discussions and sharing. The community supported the idea with an overwhelming response.

Learning at Scale 2016 was truly a community effort. We first thank the authors for their creativity and rigor. We are grateful to the program committee and all the reviewers for their thoughtful and constructive evaluation of the submitted papers, and their careful shepherding. ACM was our rock. Finally, the conference received invaluable sponsorship from Oracle Academy and Google at the gold level, as well as from edX, Instructure, Inc., and Microsoft Research at the bronze level.

We hope that the conference will be a forum for wonderfully interesting exchanges between researchers and practitioners from institutions around the world. While the proceedings may not capture the live excitement, they present a permanent record. May they be a valuable resource for many researchers interested in Learning at Scale in the years to come!

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