A look back at the June 2016 BMM Workshop in Sestri Levanti, Italy

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On June 20th 2016, the first of a series of workshops on the science of intelligence kicked off in Sestri Levante, Italy. Organized by the Center for Brains, Minds, and Machines (CBMM), the Italian Institute of Technology (IIT), and the Max Plank Institution for Biological Cybernetics, this three-day workshop brought together an international cast of researchers to discuss human and machine intelligence. Computer scientists, cognitive scientists, and neuroscientists collaborated in a wide-ranging conversation about integrating different approaches to intelligence, both artificial and human, into a coherent science of intelligence.

This science of intelligence aims to understand human intelligence while developing new approaches to machine intelligence; entering into a virtuous cycle where building machines sheds light on the inner workings of the human brain and understanding the human brain paves the way toward increasingly intelligent machines. To this end the workshop covered a wide range of topic including: robotic interaction, robotic and human navigation, the connections between human memory and robotic memory, the use of language for communication, neural representation of language, new theories of deep learning and their connection to the brain, analyses of child play and children's understanding of the world, and the connection between audio and scene understanding. These represent the broad range of phenomena we aim to account for through a science of intelligence. This science will enable machines to adapt to new problems, recover from errors, and learn in ways that are similar to those of humans, while shedding light on how humans perform such tasks.

This workshop is a key building block of CBMM whose mission is to make progress on the greatest problem in science — human intelligence. A new field is emerging dedicated to developing a computationally centered understanding of human intelligence and to establishing an engineering practice based on that understanding. CBMM's long-term goals are to uncover basic principles of intelligence, both natural and artificial, and the mechanisms that can be used to implement intelligent systems, both by brains and in silicon. For the past several years, the Center for Brains, Minds, and Machines has been pursuing this goal and is now opening the conversation to an international audience.

The Sestri workshop brought together a unique cast of internationally known leaders in Artificial Intelligence, Machine Learning, Cognitive Science, and Neuroscience. A full list of participants is available at https://cbmm.mit.edu/bmm-workshop-sestri.