HPI Colloquium

06.02.2020, 4 pm
Hasso-Plattner-Institut, Lecture Hall 1, Campus 1
Campus Griebnitzsee, 14482 Potsdam

Clinical-grade Artificial Intelligence:
Leading the Computational Transformation of Medicine

Prof. Dr. Thomas J. Fuchs

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Abstract

Artificial Intelligence is revolutionizing medicine and will fundamentally transform how patients are diagnosed and treated. One of the disciplines most impacted is pathology which is in the midst of evolving from a qualitative to a quantitative discipline. This transformation is driven by machine learning in general and computational modeling and deep learning in particular. In this talk we will analyze what it takes to build a clinical-grade artificial intelligence, how deep learning at petabyte-scale enables new ways of cancer diagnosis and how these systems impact clinical practice and the work of physicians. We will try to separate the vast potential of machine learning in healthcare from the current hype and address crucial issues of ethics and patient privacy. Finally, we will take a look into the future to medicine and how artificial intelligence can impact and improve cancer care for patients.

Short Bio

Prof. Dr. Thomas J. Fuchs is leading the Medical Machine Learning and Computational Pathology group at Memorial Sloan Kettering Cancer Center. He is Associate Professor for Machine Learning at Weill-Cornell University, and director of the Warren Alpert Center for Digital and Computational Pathology in New York City.
Dr. Fuchs' laboratory at MSKCC focuses on advancing the diagnosis and treatment of cancer through large-scale machine learning in the field of Computational Pathology. His lab built the first clinical-grade Artificial Intelligence in pathology and is developing computational models for correlating the tissue phenotype with the genotype, treatment response and patient outcome.
Before joining MSKCC, Dr. Fuchs completed his MS (Dipl.-Ing.) in Technical Mathematics from the Technical University Graz, Austria, and earned a Dr. Sc. in Machine Learning from ETH Zurich including a PhD program on System Biology and Medicine from ETH's CCSPMD in Switzerland. After his postdoctoral studies at the California Institute of Technology's Department of Electrical Engineering and Computation and Neural Systems, he joined NASA as a research technologist in the Engineering and Science Division of NASA's Jet Propulsion Laboratory in Pasadena, California.

Host: Prof. Dr. Christoph Lippert