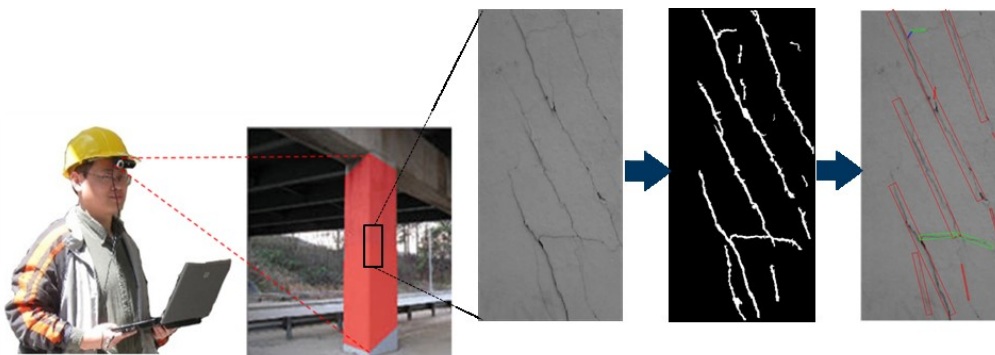**Seminar / Invited lecture**

Visual Sensing and Analysis in Construction

Zhenhua Zhu, Ph.D., P.Eng., Concordia University

Friday, 20th July 2018 at 13:00
Lecture hall D, Marienstraße 13C

Prof. Dr.-Ing. Christian Koch

Faculty of Civil Engineering

Chair of Intelligent
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Abstract: The success of a construction project requires its performance in terms of quality, cost, schedule, safety, etc. to meet its planned expectations. Therefore, it is necessary to accurately and timely measure the project performance along the construction progress. When problems are detected, the adjustments could be made quickly to ensure that the project is always on the right track. However, the current practices for construction performance measurements heavily depend on manual field observations and recordings by project owners, contractors, and/or subcontractors. They are time-consuming, error-prone, and not always available to provide the effective performance measures at both construction task and project levels. In order to address these issues, this presentation investigates the feasibility of improving the project performance measurements with the support of visual sensing and analysis technologies. Several research projects conducted by the presenter will be introduced and discussed. These projects include 1) concrete column recognition and crack detection for rapid building safety evaluation; 2) 3D modeling of built and indoor environments; and 3) video-based construction site monitoring for measuring project earned values and improving construction worker safety. The preliminary results indicate that the visual sensing and analysis technologies provide an effective way to capture onsite information and facilitate multiple construction engineering and management tasks.

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Bio: Dr. Zhenhua Zhu is an Associate Professor of Construction Engineering and Management in the Department of Building, Civil, and Environmental Engineering at Concodia University. He is also a registered Professional Engineer in the Province of Ontario, Canada. He received his B.Eng. in Civil Engineering in 2002 and M.Eng. in Computer Science and Technology in 2006. Both were from Zhejiang University, China. In 2011, he obtained his Ph.D. in Civil Engineering from Georgia Institute of Technology, USA, and then joined Concordia University as Assistant Professor.