Theoretical and Practical Considerations for the Future of Patient Monitoring in the Surgical Environment

Speaker
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In the US alone, more than 50,000 people undergo surgery with general anesthesia every day. Of these people, 88% experience moderate to severe post-operative pain. Clinicians dose drugs to induce and maintain anesthesia informed by vital signs and leveraging clinical experience. More advanced health informatics exist, but few make it to practical use in operating rooms. New methods based on existing clinical monitoring are effective and will facilitate clinical adoption. Collecting physiological data to validate these technologies in a surgical environment is possible but requires careful implementation to minimize impact on clinical workflow. Once deployed, novel monitoring techniques will enable unprecedented insights for clinicians, enabling precise, personalized drug delivery and maximizing patient outcomes.

Reid Kovacs is a PhD student in Electrical Engineering and Computer Science at the Massachusetts Institute of Technology (MIT). Reid is advised by Dr. Emery Brown at the Institute of Medical Engineering and Science. For his research, Reid collects human subject data in the clinical environment at the Massachusetts General Hospital (MGH). Leveraging this information, Reid is developing clinical decision support systems to guide clinicians to deliver optimal doses of anesthetic drugs during surgery. Prior to his time at MIT and MGH, Reid completed his Master's in Electrical Engineering at Rochester Institute of Technology, where he pursued research in highly sensitive image sensors.

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Seminar Room
"Alessandra Alario"
(2nd floor)
Building 21

Politecnico di Milano
Piazza Leonardo da Vinci, 32
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