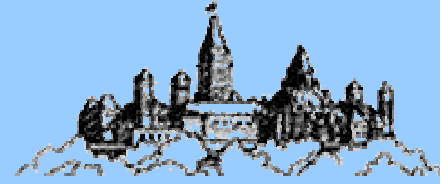




Celebrating 125 Years  
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# Ottawa Section

IEEE 125<sup>th</sup> EMBS Seminar Series



## Long-term and Short-term Heart Rate Variability Analysis

**Dr. Saif Ahmad**

*Research Associate*

*School of Information Technology and Engineering  
University of Ottawa*

**Nov 2, 2009**

*admission is free*

**18:00 – 19:30 pm**

**Mackenzie Building 3356**

**Carleton University**

*Light refreshment will be served*

Heart rate variability (HRV), a measure of the beat-to-beat fluctuations in the heart rate (HR), is an important biomarker of health and illness. HRV can be measured from a stream of electrocardiogram (ECG) or mechanical pulse wave data. Alterations (generally reductions) in HRV have been shown to be associated with pathologic states and aging, making it an exciting new dimension for diagnosing and prognosticating diseases. A panel of HRV characterization techniques, rooted in mathematics and computer science, is available to the putative analyst. Each technique provides complementary yet unique information about the state of the physiologic system. I will provide a brief introduction to the area of HRV analysis. In addition, I will talk about the applications and implications of long and short term HRV analysis. Finally, I will present some results from my research on HRV analysis and its practical applicability in assessing physiological status.

Saif Ahmad received the degree of Bachelor of Engineering (BEng) in electrical engineering from the Aligarh Muslim University, India in 1996. After working for over three years as an electrical engineer with Tata Chemicals Ltd., India, Saif went on to complete his Master of Science (MSc) in computer science from the University of Birmingham, UK in 2001. In 2007, Saif graduated with a Doctor of Philosophy (PhD) degree in computer science from the University of Surrey, UK. Saif worked as a postdoctoral fellow in the Divisions of Thoracic Surgery and Critical Care Medicine at the Ottawa Hospital (General Campus) from June 2006 to December 2008. Since January 2009, Saif is working as a research associate in the School of Information Technology and Engineering (SITE) at the University of Ottawa. More information about Saif Ahmad, his research, and publications can be found on his website at [www.saifahmad.com](http://www.saifahmad.com).



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