

ECE 600 Seminar
January 31, 2011, 3:45 – 4:45PM, EH 1800

Title: ***Prognostics in a Particle Filtering Framework***

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Abstract:

One of the key motivating factors for using particle filters for prognostics is the ability to include model parameters as part of the state vector to be estimated. This performs model adaptation in conjunction with state tracking, and thus, produces a tuned model that can be used for long term predictions. This feature of particle filters works in most part due to the fact that they are not subject to the "curse of dimensionality", i.e. the exponential growth of computational complexity with state dimension. However, in practice, this property holds for "well-designed" particle filters only as dimensionality increases. This talk explores the notion of wellness of design in the context of predicting remaining useful life for individual discharge cycles of Li-ion batteries.

Biography:

Dr. Bhaskar Saha is one of the leading researchers in the area of System Health Management. He is currently a Research Scientist with Mission Critical Technologies, Inc. working at the Prognostics Center of Excellence, NASA Ames Research Center. His research is focused on applying various classification, regression and state estimation techniques for predicting remaining useful life of systems and their components, as well as developing hardware-in-the-loop testbeds and prognostic metrics to evaluate their performance.

Dr. Saha received his Ph.D. from the School of Electrical and Computer Engineering at Georgia Institute of Technology, Atlanta, GA, USA in 2008. He received his M.S. also from the same school and his B. Tech. degree from the Department of Electrical Engineering, Indian Institute of Technology, Kharagpur, India. He has been an IEEE member since 2008 and has published several papers on these topics. He has also been awarded two IEEE Best Paper awards.