

September 2010

Rock River Valley Section

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Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

IEEE RRVS, RRVS Computer/Control Systems Chapter and Rock Valley College Meeting
SERVING IEEE MEMBERS OF NORTH CENTRAL ILLINOIS AND EXTREME SOUTH CENTRAL WISCONSIN

Embedded Control — Theory and Applications

WHEN Thursday, September 30, 2010

WHERE

Rock Valley College, Woodward Technology Center, Room 142. I-90 to Riverside Blvd., exit and go west to Mulford Rd. Go south to 2nd light, turn east into RVC. Follow road to left to last building on right.

AGENDA

6:00 PM Networking
6:30 PM Dinner
7:30 PM Presentation

PROGRAM

Traditional system theory is replete with models of systems described by differential or difference equations. The prevalence of differential equations can be traced to Classical Mechanics, while difference equations arise out of sampling a continuous-time system. The "physics-based" representation of systems loses much of its relevance when one considers "person-made" systems. Differential or difference equations are inadequate to represent and/or analyze the operational control of a manufacturing system, contention-resolution of shared resources

in computer networks, or most embedded control algorithms as they are implemented today. We have to deal with systems characterized by state variables that have a logical or symbolic, as opposed to an algebraic, interpretation. In this talk we will present an archetypal embedded control problem, and present a brief overview of the extant theory that can handle such systems.

SPEAKER

R.S. Sreenivas (S'83-M'93-SM'02) received the B.Tech degree in Electrical Engineering from the Indian Institute of Technology, Madras, in 1985, and the M.S. and Ph.D. degrees in Electrical and Computer Engineering from Carnegie Mellon University, Pittsburgh, PA in 1987 and 1990, respectively.



He was a Post-Doctoral Fellow in Decision and Control at the Division of Applied Sciences, Harvard University, Cambridge, MA, before he joined the University of Illinois at Urbana-Champaign in September 1992.

He is currently an Associate Professor of Industrial and Enterprise Systems Engineering, Research Associate Professor with the Coordinated Science Laboratory, Information and Trust Institute, and the Illinois Center for Transportation. His research interests include modeling, analysis, control and performance evaluation of discrete-event/discrete-state systems.

MEAL INFORMATION

Dinner will feature roast turkey and a vegetarian entrée. The costs are: member: \$5, non-member: \$10, student members: \$2, student non-members: \$5. Please make **dinner reservations online (preferred) at http://meetings.vtools.ieee.org/meeting_view/list_meeting/3309** or by emailing Ginger at ginger.spinasantata@hs.utc.com **by Tuesday, September 28, at 5pm**. Please include the following: name, phone number, email address, IEEE member number, choice of entree. Unemployed members may call the Treasurer for special arrangements.

NOTE

The meeting is open to the general public. You need not be an IEEE member to attend. Guests are welcome. Please email Ginger at ginger.spinasantata@hs.utc.com for questions.

IEEE Chicago/Rockford Consultants Network Meeting

WHEN AND WHERE: Monday, September 27, 2010, from 6:45 - 8:45 PM at the Palatine Public Library

PRESENTATION: "Multitasking, what do you do to get your next gig when you are very busy," by Dr Gary Blank P.E.

SPEAKER: Dr. Blank is currently consulting full-time in industry in the areas of Control Systems, Digital Signal Processing, and Electronics. He also teaches engineering courses live, and on home-study videos for review for both the PE Exam in Electrical and Computer Engineering and for the Fundamentals of Engineering (General Engineering) Exam. He also conducts seminars and workshops internationally on how to start and expand a successful consulting practice.

Gary received his B.S. from Illinois Institute of Technology, his M.S. from the University of Idaho, and his Ph.D. from the University of Wisconsin. All degrees are in electrical engineering.

He is a Senior Member of the IEEE and he is currently the Vice President for Career & Member Services on the IEEE-USA Board of Directors, and former National Chair of the AICN (Alliance of IEEE Consultants Networks), which includes 43 networks in the United States, and eight overseas.

Please meet us for an optional dinner before the meeting: 5:30 pm at Bakers Square on Northwest Highway, 2 blocks south of the library. Guests are always welcome, both for dinner and the meeting.

Do you know that networking is responsible for most professional jobs? Do a friend a favor; invite him/her to a meeting. There is no admission fee. Don't forget to bring business cards for networking! Attendees may earn 1 PDH.

Future meetings will be held on Monday, November 22, 2010, Monday, January 31, 2011, Monday, March 28, 2011 and Monday, May 23, 2011.

October RRVS Meeting Preview

Veysel Demir, assistant professor at the Department of Electrical Engineering at Northern Illinois University, will discuss ***Simulation of Electromagnetic Fields: The Finite-Difference Time-Domain (FDTD) Method and Its Applications.*** Computational electromagnetics (CEM) has evolved rapidly during the past decade to a point where now extremely accurate predictions can be given for a variety of electromagnetics problems. The finite-difference time-domain (FDTD) method has gained tremendous popularity in the past decade as a tool for solving Maxwell's equations. In this talk, the basics of the FDTD method will be introduced, and some applications where FDTD is used will be presented.



May RRV Section Election and Picnic Recap

On May 27, IEEE RRV Section held its annual Executive Committee Officer Election and Picnic. The slate of candidates put forth in the March newsletter, and listed below, was voted into office for the 2011 calendar year. Additionally, a few of the pictures taken at the picnic are provided below.

- Chair— Alkesh Patel**
- Vice Chair— Larry Wachowiak**
- Treasurer— Adrian Vandergrift**
- Secretary — Kevin Kehl**
- Comp/CS Ch— Sam Barada**
- PELS Chair— Mark Harris**
- IAS Chpt Ch— Joe Etminan**
- EMC Chair— Jamal Shafii**



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Messages for student officers can be left at the NIU Dept of Electrical Engineering, (815) 753-9974 or e-mail at sb.niu@ieee.org

The Rock River Valley Section gratefully acknowledges the following companies and colleges for supporting Section Officers:

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RRVS Calendar

- September RRVS Meeting** **September 30**
Embedded Control — Theory and Applications, WTC, Rock Valley College, Rockford, IL
- October RRVS Meeting** **October 28**
Simulation of Electromagnetic Fields: The Finite-Difference Time-Domain (FDTD) Method and Its Applications, WTC, Rock Valley College, Rockford, IL
- November RRVS Meeting** **November 18**
TBD, Engineering Building, Northern Illinois University, DeKalb, IL


Rock River Valley Section Chapters




Industry Applications Society Chapter
Established 1992



Joint Computer/Control Systems Society Chapter
Established 1995



Power Electronics Society Chapter
Established 1996



Electromagnetic Compatibility Society Chapter
Established 2007

Time-Sensitive Material

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