



IEEE

MADISON SECTION NEWSLETTER

VOLUME 12, NUMBER 8

SERVING IEEE MEMBERS OF SOUTH CENTRAL WISCONSIN

OCTOBER 2009

Particle Filtering or Simulation on Complex Biochemical Systems

Date/Time: Tuesday, October 6, 2009, 11:45 AM – 1:00 PM
(NOTE: Tuesday meeting!)

Speaker: Dr. Petar M. Djuric, Distinguished Lecturer of the IEEE, Professor, Stony Brook University

Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444

Menu: Pizza buffet, salad and soft drinks (\$5.00 members, \$10.00 non-members, free for UW-Madison student members)

RSVP: by October 1st to David Marca via e-mail (dmarca@openprocess.com) or call 617.645.1358

Non-member guests are always welcome!

Particle filtering is a Monte Carlo – based methodology for sequential signal processing. It is designed for estimation of hidden processes that are dynamic and that can exhibit most severe nonlinearities. Also, it can be applied with equal ease to problems that involve any type of probability distributions. Therefore, it is not surprising that particle filtering has gained immense popularity. In this talk, first, the basics of particle filtering will be provided with description of its essential steps. Then some important topics of the theory will be addressed including Rao-Blackwellization, smoothing, and estimation of constant parameters. Finally, a presentation of most recent advances in the theory will be given. The talk will contain signal processing examples which will aid in gaining valuable insights about the methodology.

Petar M. Djuric received his B.S. and M.S. degrees in electrical engineering from the University of Belgrade, in 1981 and 1986, respectively, and his Ph.D. degree in electrical engineering from the University of Rhode Island, in 1990. From 1981 to 1986 he was a Research Associate with the Institute of Nuclear Sciences, Vinca, Belgrade. Since 1990 he has been with Stony Brook University, where he is Professor in the Department of Electrical and Computer Engineering. He works in the area of statistical signal processing, and his primary interests are in the theory of modeling, detection, estimation, and time series analysis and its application to a wide variety of disciplines including wireless communications and biomedicine. Prof. Djuric has served on numerous committees for the IEEE and has been invited to lecture at universities in the United States and overseas. For the years 2008-2009 he has been elected Distinguished Lecturer of the Signal Processing Society. He was the Area Editor for Special Issues of the Signal Processing Magazine and Associate Editor of the IEEE Transactions on Signal Processing. He has also been on the Editorial Boards of several journals including the IEEE Transactions on Signal Processing, the IEEE Journal of Special Topics in Signal Processing, Digital Signal Processing, Journal of Applied Signal Processing, Signal Processing, and Journal on Wireless Communications and Networking. In 2007, he received a paper award for a paper published in the Signal Processing Magazine. Prof. Djuric is a Fellow of IEEE.

High Temperature Superconductor Cables And Their Applications For T&D Systems

Date/Time: Thursday, November 19, 2009, 11:45 AM – 1:00 PM

Speaker: Narend Reddy, American Superconductor

Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444

Menu: Pizza buffet, salad and soft drinks (\$5.00 members, \$10.00 non-members, free for UW-Madison student members)

RSVP: by November 16th to David Marca via e-mail (dmarca@openprocess.com) or call 617.645.1358

Non-member guests are always welcome!

Abstract and speaker bio will be included in next month's newsletter and posted online when available.



IEEE Madison Section Officer Nominations

At the December 2009 monthly meeting, the IEEE Madison Section will conduct its annual officer elections prior to the technical presentation. The positions include chair, vice-chair, secretary, treasurer, and multiple member-at-large positions. Job descriptions can be found online at < http://www.ieee.org/web/geo_activities/units/Resources/Officer_Training/job-desc.html >. Nominations may be made via e-mail to the one of the nominating committee members: Sandy Rotter, rotter@ieee.org or Clark Johnson, clarkjohnson@cpinternet.com. Additional candidate nominations are welcome and encouraged for all positions.

The nominations to date include:

Chair: Shazia Ahsan

Treasurer: David Marca





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- **The Engineer in Transition to Management**
October 5–7, 2009 in Madison, WI
- **Effectively Managing Technical Teams**
November 4–6, 2009 in Madison, WI
- **Planning and Implementing Microwave Radio for Next Generation Networks**
November 9–11, 2009 in Madison, WI
- **Preparing for 4G Wireless: Introduction to LTE**
November 17–18, 2009 in Madison, WI

For further information...

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IEEE MADISON SECTION NEWSLETTER

Published 9 times per year (Jan. - May & Sep. - Dec.) by the Madison, Wisconsin Section of the Institute of Electrical and Electronic Engineers (IEEE), as a service to its members in south-central Wisconsin.

Printing and mailing by: SprintPrint
2790 S. Fish Hatchery Rd.
Madison, WI 53711

Mailed at Madison, Wisconsin as 3rd Class, Non-Profit postage. Permit No. 953.

Online at <http://www.bugsoft.com/ieee/>

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IEEE Madison Section 100th Anniversary Dinner / Fellows Celebration Recap

The IEEE Madison Section 100th Anniversary Dinner / Fellows Celebration was held Friday, September 25th at the Pyle Center in Madison. Approximately 65 members attended including numerous Fellows, Senior Members, Members as well as Student Members. Following a cocktail reception, IEEE Madison Section Vice-Chair Dennis Bahr welcomed attendees and everyone then sat for a delicious dinner.

IEEE-USA Senior Legislative Representative Russell Harrison then gave a very interesting and humorous presentation titled "A Perspective on the Role of the IEEE - Past, Present and Future." Russ urged all members to participate in the legislative process by connecting with their representatives and senators (both federal and state). IEEE-USA greatly simplifies this process through their online Legislative Action Center which can be accessed via a link on the main IEEE-USA web page at <http://www.ieeeusa.org/>. After logging in with your IEEE username/password, you can learn about issues currently before Congress and can directly contact your representatives and senators with your concerns.

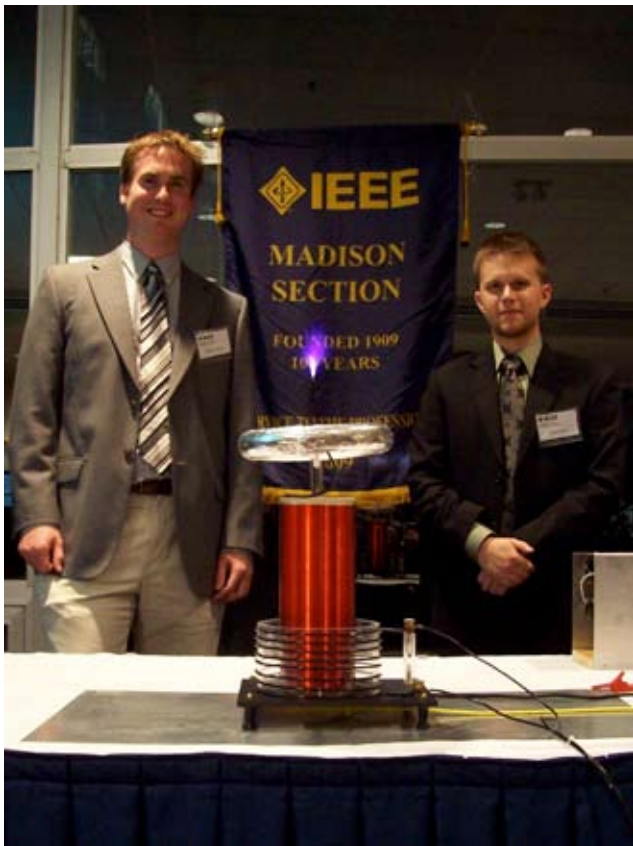
Professor Willis Long then presented the two most recent IEEE Madison Section Fellows, Susan C. Hagness and Parameswaran Ramanathan, with their certificates. Don Bramlett, IEEE Region 4 Director, then presented the IEEE Madison Section board with a banner commemorating the 100 year anniversary of the Section. There are only 17 Sections older than Madison! This banner will be on display at the next general meeting.

Don Bramlett and Bob Parro, IEEE Region 4 Central Region Chair, finished off the evening with a tag-team presentation on the history of the IEEE. Students Dan Ludois, Justin Reed, and Cory Hanson showed off their audio Tesla coil in which the audio input signal from an iPod is made audible via the generated corona of the coil. A good time was had by all.

Note that copies of all presentations are available on the section website in the meeting listing on the meeting archive page at <http://www.bugsoft.com/ieee/meet2009.html>.



2009 IEEE Madison Section Fellows Susan C. Hagness and Parameswaran Ramanathan with Professor Willis Long.



Students Dan Ludois and Justin Reed with their iPod audio modulated Tesla Coil.

Why Haven't I Been Hired Yet?

By Elizabeth Lions

When you're unemployed, you can feel trapped in an endless cycle of hopping online, looking for jobs, applying electronically... and repeating the process day in and day out (all while hoping for a speedy end to the entire ordeal). The process of finding a new job can be very frustrating... and confusing.

Why haven't I heard back?

You may not like this response, but it's the truth: the fact that you haven't been hired isn't necessarily about you.

Think about it from the employer's perspective. As an example, a friend of mine recently posted an ad for an engineering position. She is the HR director at a large privately held manufacturing business. Her ad's response drew 600 resumes.

Yes, I said 600.

I asked her what she did with so many resumes. She decided to hire an intern to help her organize all 600 into *yes*, *no* and *maybe* piles. Most managers wouldn't have taken the time to do this, but she insisted that she didn't want to miss out on a good candidate for the job. Two weeks later, with the help of an intern, she was down to 60 resumes.

She won't even conduct interviews for another two weeks. Perhaps you applied to that ad yesterday.

Do you see my point?

My mother used to say the devil is in the details, so I should paint



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the rest of the picture. Keep in mind that this ad is for one opening located in Portland, Oregon, where unemployment rivals that of Detroit, sitting at 12.2 percent with no relief in sight. Granted, due to the geographical area, the job market is nearly impossible, as other states aren't hit nearly as hard.

Stating that it's a tight job market would be a gross understatement. It doesn't seem to matter what part of the country you are in, it's tough, and some days it's downright discouraging.

How can a person get hired, despite the reality of the competition?

Here are a few tips to help you get noticed in today's competitive job market:

Gather Data

Keep an electronic spreadsheet of every job you've applied to, including the company name, the date you submitted your application and the outcome. This allows you to measure your campaign's success in a different way, so at the end of the day, you won't be left wondering if you were productive. Getting a job offer isn't the only measure of success. Some days it's just finding jobs to apply for online that is the positive result. Keep it in perspective. If you are applying and networking, you are doing all that you can.

Follow up

My theory has always been that two business days is more than enough time for a hiring manager to read a resume on their desk. If you are able, connect with the hiring manager and confirm that your resume has been received. If you aren't sure who the hiring manager is, do a quick search on LinkedIn. If all else fails, get connected to someone in Human Resources. Certainly, they can tell you if they received your resume. That's all you need to know — if you're in the pile. Be brave and call — don't just e-mail. Be proactive.

Get feedback

Expect rejection, but if you aren't selected for an interview, find out *why*. Perhaps there is a small misconception about something on your resume that could be cleared up, such as a skill set that you forgot to list. Perhaps they don't feel you are the right candidate, but instead of guessing, ask someone in the organization why your application didn't match the position's requirements. Any feedback is good feedback because with that knowledge you can start to control the market's perception. Think of feedback as data, and try not to take it personally. Probe a little further to see if there will be future openings in the next two quarters where you would be a fit.

Keep a Schedule

I advise all engineers that I career coach to keep a schedule when in job search mode. Spending all day searching on the Internet is very hard on the psyche over long periods of time. I've even had to write 'prescriptions' for clients to take home to their spouse stating they should not be on the job hunt all day long. There is nothing more discouraging than fretting about finding work and then having your significant other come home and ask what you were doing all day. If you are looking for work, try to adhere to a three- to four-hour job search schedule. For example, if you get up at 7:00 am, look for work until 10:00 am or 11:00 am, and then take the lunch hour off. Try to get out of the house, if at all possible. If you can get out and do a

networking lunch or coffee, that would be an ideal use of time. Doing some sort of exercise is an immensely helpful way to release stress and allow your mind to rest. By late afternoon, plug back in see if you've received any e-mails or traction to your resume submissions. One client I counseled was so frustrated with his job search that I advised him to go paint the house to burn off excess energy. When he broke his job hunting activity into manageable chunks and engaged in other productive activities, by the end of the day, he felt like he had accomplished something besides just looking for work. When the mind is engaged heavily for long periods of time, the best respite is to go engage the body in some other project. People find that they have more answers after they have gotten away from the problem for a short period of time.

Although the market is competitive, there is only one *you* with *your skill set*. Remember who you are and

what you have to offer an organization.

*Elizabeth Lions is an author and career coach, specializing in working with engineers. Her book *Recession Proof Yourself!* can be found at www.elizabethlions.com*

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"the fact that you haven't been hired isn't necessarily about you"



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