What can we help you discover?

Synapse
April 2004

Greetings from all of us at NeuralWare. Synapse is NeuralWare's newsletter with the latest information for friends and customers of NeuralWare. In this issue, we will cover the following:

- NeuralWare Establishes Partnerships in the Life Sciences
- Training schedule including the new Developing Neural Network Applications course
- Tips from our Technical Support Group
- Submit your own case study and receive credits towards purchases
- Other miscellaneous tidbits

NeuralWare Establishes Partnerships in the Life Sciences

In the first quarter of 2004, NeuralWare initiated collaborations with the Windber Research Institute and Neuro Kinetics Inc., two Pennsylvania organizations with significant domain experience in Biotechnology and the Life Sciences.

The Windber Research Institute (WRI) is a state of the art biomedical research facility dedicated to finding cures for genetic and metabolic diseases. WRI collects, classifies and stores well-characterized biological samples, then processes and analyzes them at the cellular and molecular level to identify DNA, RNA and proteins that are dysfunctional or inappropriately expressed. WRI uses advanced computational, biological and bioimaging techniques to determine how genes and proteins affect the way a disease develops and/or progresses. To further expand WRI's research and development related to cancer, WRI and NeuralWare have submitted a Small Business Innovation Research (SBIR) proposal to the National Institutes of Health to obtain support for using NeuralWare technology to refine the sensitivity and specificity of a group of breast cancer biomarkers.

Neuro Kinetics Inc. (NKI) is a Pittsburgh-based company that is the world leader for Custom engineered motion simulation systems for vestibular research and leading edge clinical rotary chair systems and vestibular testing peripherals, including VOG and EOG systems. NKI is dedicated to the diagnosis and treatment of patients suffering from dizziness, balance problems, vertigo, falls, and other vestibular disorders; and to helping further the knowledge of the human vestibular system. NKI's advanced hardware and software products support researchers and clinicians around the world who provide health care services and support for people with vestibular disorders. To extend the analytic power of Neuro Kinetics products, as well as to develop new products that will assist in teaching medical students and practitioners how to better diagnose and treat vestibular disorders, Neuro Kinetics and NeuralWare have submitted an SBIR proposal to NIH to obtain support for incorporating adaptive empirical models into Neuro Kinetics products.

These new initiatives in 2004 further highlight NeuralWare's commitment to developing strategic partnerships with organizations whose domain knowledge and intellectual property can be significantly enhanced through use of NeuralWare's neural network engine and related analytic capabilities. If you have an idea for a collaborative venture in the Life Sciences (or any other domain!), please contact Jack Copper (jack.copper@neuralware.com) or John Wavle (john.wavle@neuralware.com) to discuss how you can begin a collaboration with NeuralWare.

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Training

NeuralWare has released 2004 Summer/Fall training course schedule. Included in the schedule is the new course, Developing Neural Network Applications. This three-day neural computing course focuses on the practical aspects of creating and deploying neural network applications using NeuralWare development tools. It provides an overview of the NeuralWare product line, and describes the software architecture of each application and library. It also identifies the functional and architecture relationship among the products. Next, the course presents an overview of the methods that can be used to deploy neural network models, including standard NeuralWare .nnd and .npr files, FlashCode™, Designer Pack, and use of NeuralWare library components. Additional information and a syllabus are available on our website at www.neuralware.com/training.jsp.

Register by May 1 for a June or later NeuralWare course and receive a 10% early-bird discount. Courses are taught in Pittsburgh at our conveniently located headquarters just a few miles from downtown Pittsburgh.

Our regularly scheduled training courses ensure that our customers are knowledgeable about neural network technology and using our software effectively. See the schedule below to select the course that best fits your schedule. Make sure to visit our website www.neuralware.com/training.jsp or talk with our sales department to get complete course information before making your final selection.

Class size is limited to offer participants personalized instruction when necessary. A well-organized yet informal structure allows flexibility and provides opportunities for real-world information sharing and problem solving. When you visit the training website, look for comments from previous attendees.

If you have several individuals within your company that would like to attend our course, let us know and we will be happy to provide information on our on-site training programs. Contact us via email at training@neuralware.com.

If you would like to expand your knowledge of neural network technology using NeuralWare's state-of-the-art tools, plan to attend a course soon. Don't forget the 10% early-bird discount. Contact us today!

Current training schedule

Applying Neural Networks to Business, Industry and Government (4.5 days)
Jun 7-11
Aug. 23 – 27
Oct. 4 - 8

Developing Neural Network Applications (3 days)
May 17-19
July 19 – 21
Nov. 8 - 10

Advanced Neural Computing (3.5 days)
Sep. 13 - 16

Here are some comments from our August, 2003 Applying Neural Networks to Business, Industry and Government course.

"I was initially intimidated by the concept of neural networks. I walked away from this course with an excellent grasp of the fundamentals and a vision for a multitude of opportunities."

"The course was very practical; the instructors were very knowledgeable and everyone at the facility was kind, friendly and helpful."

NeuralWorks Upgrade Information
NeuralWare is currently shipping the 3.12 version of Predict and the 5.52 version of Professional II/PLUS. New to the 3.x version of Predict is a Self-Organizing Map opening the software up to a whole new series of applications (clustering). The current version is also designed to take advantage of the latest operating systems and version of Excel. Contact sales@neuralware.com for the latest update pricing and options.

Submitting an Article
If you wish to submit a case study, application note, or technical tip for publication, please contact NeuralWare sales. If we publish your contribution, you will receive a one-year Technical Assistance Program (TAP) subscription for the NeuralWare program that you use - a minimum $375 value. If you prefer, you may also apply the credit towards NeuralWare products for training! We hope you will consider this exciting opportunity as other customers have done.

Tips from our Technical Support Group

Online Learning
It would be nice to train a model, put it into service, and have that model continuously learn from new situations as they arise. Yes, that would be nice. While some learning rules that include parameter settings for 'Attentional Gain Control' tend to be better at 'Novelty Detection' than other algorithms, it is far more often the case that models are re-trained in an offline mode. Rather than continuously training, future models are built offline in the background, and then put into service at some specified frequency. While network "A" is in use, network "B" is trained, *verified by testing*, and then installed to replace network "A". Depending on the application this might occur hourly, daily, monthly or yearly.

New models might be built and used on the same machine, or they might be built on a development machine and, with appropriate deployment licenses, copied to one or several different machines to be used. The model creation process can be automated using the Command-Line interface to Predict, or the Automate feature in Professional II/PLUS (see the February 2004 Synapse, listed below, for additional details). With the addition of a monitoring system (or a monitoring neural network model!) to determine when a model update is needed, the model that was built offline can be put into service when required. The entire process can be super-automated such that model usage, background training, determining that new model

knowledge is needed, verifying new model readiness (by intelligent model testing and evaluation), and the act of swapping in the new model can all be placed under program control.

NeuralWare has worked with customers along these lines several times by helping with the over-all automation, as well as by writing custom programs to help the model building and model evaluation process. We are always happy to work on data modeling and deployment problems with you – give us a call if you think we can help!

Previous *Synapse* newsletters

Prior newsletters are available on our web site, and can be downloaded from http://www.neuralware.com/about-news.jsp

Newsletter	Tech Tip
February 2004	Automating the model building process
September 2003	Case Based Reasoning (CBR), and Application story: Robot Neurocontroller
July 2003	How good is my model? and Building linear regression models
1st Quarter 2003	Faster performance
4th Quarter 2002	Downloadable demonstration copy of Predict is available.
3rd Quarter 2002	Introduction to clustering with Predict
2nd Quarter 2002	Time series modeling
1st Quarter 2002	Sensitivity analysis and graph

Explanations and links concerning TAP, PLE and FAQ are mentioned throughout the newsletters.

Personal License Extension Information

If you are someone who needs to use your NeuralWare software both at home and at work, you are a candidate for NeuralWare's personal license extension (PLE). With a PLE you can request a second license key for your home or laptop computer for the low one-time cost of $250. Only users who are on the technical assistance program (TAP) are eligible for this benefit. To take advantage of the TAP/PLE program, contact our sales department for more information at sales@neuralware.com.

Canceling your subscription

If you wish to discontinue your subscription to the newsletter, send email to newsletter@neuralware.com and ask to be removed from the distribution list. Please insert the word "remove" in the subject line.

Additional Information

Additional information on NeuralWare is available at www.neuralware.com! We hope you will visit us!

About this eLetter