ОБІЖНИК - NEWSLETTER

ТОВАРИСТВСО УКРАЇНСЬКИХ ІНЖЕНЕРІВ АМЕРИКИ – НЮ ЙОРК
UKRAINIAN ENGINEERS' SOCIETY OF AMERICA – NEW YORK BRANCH

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From the President's Desk

Well Spring has finally arrived and we're able to put the winter months behind us. Time to put away the skis and snowboards and pull out the fishing gear, golf clubs, and tennis rackets.

First, I would like to take this opportunity to wish all of our members and their families a very Happy Easter. I'd also like to extend thanks to Mr. Wasyl Krawec for supporting the NYC Chapter by agreeing to advertise in our newsletter for a full year. We appreciate his support and encourage our members to return the favor by shopping at his establishment. Mr. Krawec has been supplying the food at the NYC Yalynka for many years.

I happy to say that the NYC UESA lecture series is proving to be a very nice addition to the Chapter's calendar of events. As you'll read in this issue of the newsletter, we had the pleasure of hearing Peter Halatyn speak on the topic of "Optimal Estimation."

In April, our very own Ivan Durbak share his experience as Chief Information Office for SUNY Downstate Medical Center by speaking about "Computer Security." This lecture will be relevant to anyone who works with computers, whether your running an entire office or just using a computer at home.

In June we will present another lecture on computer topics. This lecture will be presented by Dr. Lubomyr Romankiw, an IBM Fellow at the IBM T. J. Watson Research Center. Dr. Romankiw will speak on the topic of "Computer Disk Storage: Current Technology and Future Trends."

Most importantly, these and future lectures **will count** towards "**Professional Development Hours**" (PDH's) which are required to maintain NYS engineering licenses. Currently, it is our understanding that these hours will also be valid for architectural licensing requirements in New York.

In conclusion, as I do every month, I would like to encourage all our members to continue to participate in UESA functions, to support our projects and to contribute to our various publications.

Contributions are always welcome regardless of whether they are written by hand or on a computer or whether they are composed in English or Ukrainian.

Until next time……..

Marco Shmerykowsky, PE
Марко Шмериковський

NYC Lecture on "OPTIMAL ESTIMATION"

By Ivan Durbak

On March 2nd, 2004, the New York City Chapter of UESA presented a lecture by Peter Halatyn, President of KDM Aero Inc. on "Optimal Estimation." The lecture took place at the UESA meeting room in the Ukrainian Institute of America in New York City.

Peter Halatyn, President of KDM Aero Inc.

Mr. Halatyn combined engineering and mathematics concepts to present an informative and comprehensive look at the complex field of estimation, which he defined as "the process of extracting information from data" or, more mathematically, as "data processing methods for dealing with random variables". After introducing the topic, Mr. Halatyn began by explaining the estimation problem, involving measurements and noise in multi-sensor systems, and noting how the different types of estimation – filtering, smoothing, and predicting – have widespread applicability to thousands of real-world applications. He then went on to review the basic underlying mathematical concepts such as mean, variance, co-variance, probability, normal or gaussian probability distributions, and vector matrices.

Mr. Halatyn speaking on "Optimal Estimation"

Mr. Halatyn next provided a broad historical perspective, beginning with the deterministic least-squares estimation techniques invented by Gauss (in 1809), and continuing with the work of R.A. Fisher (in 1912) with probability density functions and maximum likelihood estimation techniques. He then moved to the work of N. Wiener (in 1940), who used the frequency domain approach to design statistically optimal filters used to solve the problem of estimating signals in noise in important applications such as radar. The next and possibly most-important development was the seminal work of R.E. Kalman (in 1960) who used optimal recursive filter techniques, based on vector modeling of state-space and time-domain formulation, to develop a very efficient and robust "least-squares" estimation methodology.

Lecture attendees following Mr. Halatyn's presentation

Mr. Halatyn explained how the Kalman filter is now the most commonly used optimal filtering technique: for example, a recent "Google" search on the internet revealed over 15,000 applications using Kalman Filtering methods. These applications span a broad array of science and engineering areas, including flood prediction and atmospheric model forecasts, wireless networks, GPS pedestrian navigation, real-time estimation of human body postures, cellular networks, lidar and microwave radiometers, trace gas concentration measurements, probabilistic video stabilization, glottal closed-phase location & analysis, neural networks, weather models, and even stock market forecasting. The power of Kalman filtering lies in its ability to combine the dynamic process model with the measurement model to efficiently, recursively, and robustly estimate unknown random parameters and missing states based on a sequence of noisy measurements. Kalman filtering has also been extended to nonlinear models and reformulated to use functions instead of matrices.

Mr. Halatyn finished with a detailed example of the GPS (global positioning system), where a 24 satellite-based navigation system uses the linearization techniques of the extended Kalman filter to precisely locate any position on earth.

Throughout this presentation, which lasted over two hours into the night, Mr. Halatyn kept the audience engaged and involved with an artfully combined balance of highly technical material and practical real-world problem examples.

The evening finished with informal and convivial discussions over food and drinks.

Chapter President Marco Shmerykowsky, PE presents Mr. Halatyn with an official UESA shirt

Mr. Halatyn, one of many brilliant Ukrainian engineers, has conducted research, published recent papers, and worked on practical applications using leading-edge mathematical modeling techniques that span a broad array of application areas, including cybernetics, aeronautical science, electrical engineering, navigational control, and stock market forecasting. He now runs his own engineering consultant company; previously he had worked for many of the major aerospace / engineering companies, including Sikorsky, Boeing, Lockheed, and Honeywell.

This was the third in a series of engineering & scientific lectures presented by the Ukrainian Engineers' Society of NYC during the 2003/2004 year. The next lecture will be presented on Tuesday April 20, 2004 by Ivan Durbak on "Computer Security".

Open-Source Software

The recent spate of e-mail born computer viruses that have been circulating via the internet with increasing frequency in the past few months are driving people to new levels of frustration. Often, these viruses are able to spread so quickly because of "bugs" in programs such as Microsoft's popular e-mail client, Outlook.

The logical question to ask is that if it is "Microsoft's programs" that are the entry point and "nourishment" for these malicious viruses, are there any alternative products which provide the same functionality. Fortunately, the open source software community has several programs and tools which are widely available, very compatible with accepted standards, and most importantly **free**.

The first program everyone should seriously consider "upgrading" to is probably the most used tool on your computer - the web browser. Those who remember the state of computing before Microsoft "discovered" the Internet will recall that the most popular web browser came from Netscape. It was common for web sites to have logos which stated "Best Viewed with Netscape."

Once Microsoft entered the game and began to distribute their web browser with the operating system, Netscape began to become less popular. Eventually, Netscape was purchased by AOL and the source code for the Netscape browser was turned over to the open source community to create the Mozilla project. The Mozilla project can be accessed via the web at www.mozilla.org.

The Mozilla web browser has several features which are not available in Microsoft's browser. On popular feature is Mozilla's ability to block the multiple "popup windows" which often contain nothing more than annoying advertising. The program's popup blocker notifies you when popups are blocked. You can also block pop-ups on a site per site basis. It puts control of the web browsing experience back in the hands of

the user. Similarly, the program has the ability to selectively block images from various web sites.

Mozilla Web Browser with the Tabbed Browsing Feature

Another nice feature is the ability to simultaneously load multiple web pages in the same browser window using a feature called "tabbed browsing". Previously, you either needed to few one web site at a time in a linear fashion or you needed to open multiple instances of the same program. With tabbed browsing you can open several pages at once with one "click" without using a much of the computer's limited resources.

Mozilla also has all the features a modern browser should have including: advanced security settings; password, download, and cookie managers; Themes; multi-language and multi-platform support; and, the latest in Web Standards.

Mozilla E-mail and Newsreader Client

All this features put Mozilla ahead of the current version of Microsoft's Internet Explorer. In addition to this functionality, however, there is more. Mozilla also contains an e-mail program which can handles multiple e-mail accounts, a newsgroup reader, and a tool to compose web pages. The e-mail program is especially useful since it contains "Junk e-mail control" features which are designed to filter out the torrent of SPAM which troubles all e-mail users. Also, since many viruses are targeted at exploiting problems in Microsoft Outlook and it's address book of e-mail addresses, chances are that Mozilla won't be affected by the same problem.

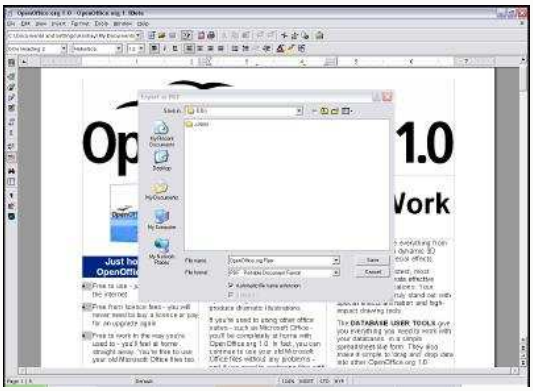
If you're happy with your current browser or e-mail client, then it is possible to download either "Firefox", which is Mozilla's next generation web browser without the added e-mail, newsgroup & composer functions, or Thunderbird, which is a standalone e-mail program based on the Mozilla engine. Both these programs are available from the Mozilla web site at www.mozilla.org.

Mozilla Web Page Editing Tool

Another winner in the open source world is the OpenOffice.org project. OpenOffice.org is both an Open Source product and a project. The product is a multi-platform office productivity suite. It includes the key desktop applications, such as a word processor, spreadsheet, presentation manager, and drawing program, with a user interface and feature set similar to other office suites. Sophisticated and flexible, OpenOffice.org also works transparently with a variety of file formats, including those of Microsoft Office.

Available in 25 languages with more being constantly added by the community.

OpenOffice.org runs stably and natively on Solaris, Linux (including PPC Linux), and Windows. Additional ports, such as for Frees, IRIX, and Mac OS X, are in various stages of completion.



OpenOffice 1.1.1 Office Productivity Suite

Written in C++ and with documented APIs licensed under the LGPL and SISSL Open Source licenses, OpenOffice.org allows any knowledgeable developer to benefit from the source. And, because the file format for OpenOffice.org is XML, interoperability is easy, making future development and adoption more certain.

In general, if you look hard enough, you'll be able to find the right tool for the right job, Chances are it will be available without cost and you'll be able to find adequate support for any problems that may arise via numerous Internet Web Sites and Newsgroups.

Advertise in the UESA-NYC Newsletter

The New York City Chapter Newsletter is published bi-monthly by UESA-NYC and is distributed to all chapter members. Additionally, past issues are archived on the UESA web site and are accessible by the entire internet community.

Full Page	-	$75 per issue
Half Page	-	$50 per issue
Quarter Page	-	$25 per issue
Eighth Page	-	$12.50 per issue

Page size is 8.5 by 11 inches. Discounts are available for space purchased across multiple issues.

For additional information, please contact us at the address on the letterhead or via e-mail at nyc@uesa.org,

Coming NYC UESA Lectures

April 20: "Computer Security: Protecting the integrity, availability, and confidentiality of computer systems, both at home and at the office"

Speaker: Ivan Durbak, Chief Information Officer
SUNY Downstate Medical Center
Lecture will count towards 1 PDH

June 2 : "Computer Disk Storage: Current Technology and Future Trends"

Speaker: Dr. Lubomyr Romankiw, IBM Fellow
IBM T. J. Watson Research Center
Lecture will count towards 1 PDH

Chapter Event – UESA Lecture Series – April 20, 2004

Subject: Computer Security: Protecting the integrity, availability, and confidentiality of computer systems, both at home and at the office

Speaker: Ivan Durbak, Chief Information Officer
SUNY Downstate Medical Center

Location: UESA Meeting Room at the Ukrainian Institute of America
2 East 79th Street, New York City

Time: Sign-in Registration – 6:45pm, Lecture 7:30pm

Admission: $5 per person, Students free (with valid school ID)

(The lecture will be in English, the Questions and Answers may be in either Ukrainian or English)

BOARD MEMBERS NEW YORK:

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Please send news items, articles, information about our members, other interesting information and address changes to the following address:

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