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*Professor and Department Head*

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#### TECHNICAL AND RESEARCH INTERESTS

- Service Differentiation and Quality of Service in Computer Networks
- Internet and TCP/IP Protocols
- Network Security
- Simulation and Network Performance
- Mobile ad hoc Networks and Wireless Technology
- Machine Learning, Statistical Data Mining, and Data Analytics
- Applications of Random Forests to analysis of pharmaceutical data
- Clustering categorical data with Similarity functions

#### EDUCATION

- **Ph.D. in Computer and Information Sciences, August 2003**  
University of Delaware – Newark, DE
- **M.S. in Computer Science, May 1999**  
University of Delaware – Newark, DE
- **B.S. in Computer Science, Minor in Mathematics (Suma Cum Laude), May 1997**  
Widener University – Chester, PA

#### WORK EXPERIENCE

- **Department Head:** Computer Sciences, Rowan University, 9/01/17 – to date.
- **Department Chair:** Computer Sciences, Rowan University, 9/01/15 – 8/31/17.
- **Associate Chair:** Computer Sciences, Rowan University, 9/01/12 – 8/31/15.
- **Professor:** Dept. of Computer Science, Rowan University, 9/01/14 – to date.
- **Associate Professor:** Dept. of Computer Science, Rowan University, 9/01/08 – 8/31/14.
- **Assistant Professor:** Dept. of Computer Science, Rowan University, 9/01/03 – 8/31/08.
- **Software Engineer:** Ericsson IP Infrastructures, Rockville, MD, Summer 2001
- **Associated Technician,** Internship program at SmithKline Beecham, Gulf Mills, PA, June 1996 – December 1996
- **VAX Manager,** Computer Laboratory, Widener University, June 1995 – May 1997

#### TEACHING EXPERIENCE

- **Professor:** Department of Computer Science, Rowan University
  - *Advanced Design and Analysis of Algorithms*, (graduate course)
  - *Network Security*, (graduate course)
  - *Advanced TCP/IP and Internet Protocols*, (graduate course)

- *Computer Networks*, (graduate course)
  - *TCP/IP and Internet Protocols*, (Wireshark, OPNET IT Guru and Modeler)
  - *Data Communications and Computer Networks*, (Wireshark, OPNET IT Guru and Modeler)
  - *Computer Organization*, (MIPS, assembly language)
  - *Data Structures and Algorithms*, (C/ C++ and Java)
  - *Object Oriented Programming and Data Abstraction*, (Java)
  - *Introduction to Object-Oriented Programming*, (Java)
  - *Computer Science and Programming*, (C/C++)
  - *Introduction to Scientific Programming*, (Visual Basic)
  - *Introduction to Programming*, (Visual Basic)
- **Laboratory Instructor:** Department of Computer and Information Science, University of Delaware, Newark DE, Fall 1997 – Summer 1998
  - **Instructor,** Widener University, January 1997 – May 1997
  - **Tutor,** Math Center, Widener University, September 1994 – May 1997

### FUNDED GRANT PROJECTS:

- **Bristol-Myers Squibb (Using Statistical & Machine Learning Techniques for analysis of pharmaceutical data)**, PI: Umashanger Thayasivam (Department of Mathematics), co-PI: Vasil Hnatyshin, 6/1/13 – 5/15/18, \$220,000
- **Mission Solutions Engineering (Iris Project phases I, and II, Multi-cursor Project, J2EE Cloud Project)**, PI: Vasil Hnatyshin, co-PI: Ganesh Baliga, Jenifer Kay, 10/2012 – 9/2013, \$138,298
- **OPNET Technologies Inc. /Riverbed Technology Inc. (Teaching and Research with OPNET Software)**, PI: Vasil Hnatyshin, Software License Grant which includes 30 license blocks for several different software products such as IT Guru and Modeler, and modules such as WiMax (802.16), IPv6, Wireless, Terrain Modeling, and MPLS. Total of 240 software licenses have been awarded, Fall 2003 – Spring 2013.
- **Rowan University Seed Funding Award (Applications of Statistical and Machine Learning Data Mining Techniques to Network Security and Forensics)**, PI: Vasil Hnatyshin, co-PI: Umashanger Thayasivam, 7/1/13 – 6/31/14, \$10,000
- **Rowan University Provost's Laptop Initiative (Pilot Laptop Initiatives)**, K. Brand (PI), V. Hnatyshin (co-PI), T. Fusco (co-PI), A. Lobo (co-PI), 9/08 – 5/09, \$73,000.

### BOOKS:

1. Adarshpal S. Sethi and Vasil Y. Hnatyshin, “*The Practical OPNET User Guide for Computer Network Simulation*,” 527 pages, Chapman and Hall/CRC (August 24, 2012), ISBN-10: 1439812055, ISBN-13: 978-1439812051

### BOOK CHAPTER:

1. S. Hnatyshyn, U. Thayasivam, V. Hnatyshin and C. White, *Chapter 7: Machine learning algorithms for metabolomics applications*, In book: Identification and Data Processing Methods in Metabolomics, Publisher: Future Science Book Series, pp. 96-110 DOI: 10.4155/fseb2013.14.163, 2015.

**PUBLICATIONS** (chronological order):

1. Dixon M, Genov S, Hnatyshin V, Thayasivam U, “*Accuracy of Clustering Prediction of PAM and K-Modes Algorithms*”, Proc. of IEEE Future of Information and Communication Conference, Singapore, April 2018
2. I. B. Muck, V. Hnatyshin, and U. Thayasivam, “*Accuracy of Class Prediction using Similarity Functions in PAM*”, in Proc. of IEEE International Conference on Industrial Technology (IEEE ICIT 2016), Taipei, Taiwan, March 14-17, 2016
3. S. Gennaoui, J. Yin, S. Swinton, and V. Hnatyshin, “*Investigation and Comparison of MPLS QoS Solution and Differentiated Services QoS Solutions*”, Proc. of International Conference OPNETWORK 2013, Session 1540: Customer Presentations: High-Speed Switching, Optical Networks and QoS, Washington DC, August 2013
4. S. Akhter, J. Myers, C. Bowen, S. Ferzetti, P. Belko, V. Hnatyshin, “*Modeling DDoS Attacks with IP Spoofing and Hop-Count Defense Measure Using OPNET Modeler*”, Proc. of International Conference OPNETWORK 2013, Session 1538: Customer Presentations: Specialized Topics in Simulation, Washington DC, August 2013
5. J. Wakemen, M. Hodson, P. Shafer, and V. Hnatyshin, “*Using High-Powered Long-Range ZigBee Devices for Communication During Amateur Car Racing Events*”, Proc. of International Conference on Wireless Communications, Vehicular Technology, Information Theory and Aerospace and Electronic Systems Technology (WirelessVITAE-2013), Global Wireless Summit 2013, Atlantic City, NJ June 2013.
6. R. Hussey, E. Huff, Z. Shinwari, and V. Hnatyshin, “*A Comparative Study of Proactive and Reactive Geographical Routing Protocols for MANET*,” Proc. of 12<sup>th</sup> International Conference on Wireless Networks (ICWN' 13), July 22-25, 2013, Las Vegas, USA
7. Vasil Hnatyshin, “*Improving MANET Routing Protocols Through the Use Of Geographical Information*,” International Journal of Wireless & Mobile Networks (IJWMN), Vol. 5, No. 2, April 2013, DOI: 10.5121/ijwmn.2013.5201
8. Vasil Hnatyshin, Remo Cocco, Malik Ahmed, Dan Urbano, “*Dynamically Adjusting the Request Zone in GeoAODV Protocol*,” Proc. of OPNETWORK 2012 International Conference, Washington, DC, August 2012 - received distinguished paper award.
9. Remo Cocco, Vasil Hnatyshin, Malik Ahmed, Dan Urbano, “*Improving Geographical AODV Protocol by Dynamically Adjusting the Request Zone*,” 35<sup>th</sup> IEEE Sarnoff Symposium, Newark, NJ 2012.
10. V. Hnatyshin, M. Ahmed, R. Cocco, and D. Urbano, “*A Comparative Study of Location Aided Routing Protocols for MANET*”, Proc. of 4<sup>th</sup> IEEE/IFIP Wireless Days 2011 conference, Niagara Falls, Canada.
11. V. Hnatyshin and H. Asenov, “*Design and Implementation of an OPNET model for simulating GeoAODV MANET routing protocol*”, OPNETWORK 2010, Session 1558: Wireless Ad Hoc and Wireless Personal Area Networks, Washington DC, August 2010
12. V. Hnatyshin, H. Asenov, J. Robinson, “*Practical methodology for modeling wireless routing protocols using OPNET Modeler*”, Proc. of 21<sup>st</sup> International Conference on Modeling and Simulation (MS 2010), July 15 - 17, 2010, Banff, Alberta, Canada.
13. H. Asenov, and V. Hnatyshin, “*GPS-Enhanced AODV routing*,” Proc. of the 2009 Int'l Conference on Wireless Networks (ICWN'09), Las Vegas, Nevada, (July 13-16, 2009).
14. V. Hnatyshin and A. Lobo, “*Undergraduate Data communications and Networking Projects Using OPNET and Wireshark Software*,” Inroads: SIGSCE Bulletin, Vol. 40, No 1, pp. 241 - 245, March 2008.

15. V. Hnatyshin and M. Simmons, "*Practical Methodology for Development and Deployment of Standard Applications Process Models using OPNET Modeler*," Proc. of OPNETWORKS 2007, Session 1558: Advanced Simulation Technology. Washington, DC, August 2007.
16. V. Hnatyshin, G. Gramatges, and M. Stiefel, "*Practical Considerations for Extending Network Layer Models with OPNET Modeler*," Proc. of International Conference on Modeling and Simulation (MS 2007), May – June 2007.
17. V. Hnatyshin, A. Lobo, P. Bashkirtsev, R. DeDomenico, A. Fabian, G. Gramatges, J. Metting, M. Simmons, M. Stiefel, "*Modeling a University Computer Laboratory using OPNET Software*", Proc. of 14<sup>th</sup> Int'l Conference on Telecommunication Systems: Modeling and Analysis (ICSTM06), pp. 211 - 218, October 5-8, 2006, Reading PA.
18. V. Hnatyshin and A. S. Sethi, "*Architecture for Dynamic and Fair Distribution of Bandwidth*," Int'l Journal of Network Management (Wiley), Volume 16, Issue 5, September/October 2006, pp 317- 336.
19. V. Hnatyshin, J. Ogren, J. Pucci, and C. Clement, "*Influence of the discarding the out-of-profile packets policy on TCP traffic*," Proc. of the 2005 Int'l Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'05), Volume 3, pages 1215 - 1221, Las Vegas, NV, June 2005.
20. V. Hnatyshin and A. S. Sethi, "*Estimation Based Load Distribution in the Internet*," Computer Networks, Volume 48, Issue 4, 15 July 2005, Pages 525-547.
21. V. Hnatyshin and A. S. Sethi, "*Scalable Architecture for Providing Per-flow Bandwidth Guarantees*," Proc. of Communications, Internet and Information Technology Conference (CIIT 2004), St. Thomas, Virgin Isles, November 2004.
22. V. Hnatyshin and A.S. Sethi, "*Optimization of the Bandwidth Distribution Scheme for Handling Topology Changes*," Proc. of Int'l Performance Computing and Communications Conf., Phoenix, AZ, April 2004, DOI: 10.1109/PCCC.2004.1394986
23. V. Hnatyshin and A.S. Sethi, "*Reducing load distribution overhead with message aggregation*," Proc. of Int'l Performance Computing and Communications Conference, Phoenix, AZ, April 2003, DOI: 10.1109/PCCC.2003.1203703
24. V. Hnatyshin and A.S. Sethi, "*Fair and Scalable Load Distribution in the Internet*," Proc. 3<sup>rd</sup> Int'l Conference on Internet Computing, Las Vegas, NV (June 2002).
25. V. Hnatyshin and A.S. Sethi, "*Providing per-flow QoS using load distribution scheme*," TR 2002-06, Department of Computer and Information Science, University of Delaware, Newark, DE, February 2002.
26. V. Hnatyshin and A.S. Sethi, "*Achieving Fair and Predictable Service Differentiation Through Traffic Degradation Policies*," Proc. SPIE QoS 2001, Conference on Quality of Service over Next-Generation Data Networks, Denver, CO, Aug. 2001.
27. V. Hnatyshin and A.S. Sethi, "*Avoiding Congestion Through Dynamic Load Control*," Proc. ITCOM-2001, SPIE's Int'l Symposium on The Convergence of Information Technologies and Communications, Denver, CO, Aug. 2001, pp. 309-323.
28. A.S. Sethi, D. Zhu, V. Hnatyshin, and P. Kokati, "*Battlefield Network Applications of the SHAMAN Management System*," Proc. MILCOM '01, IEEE Military Communications Conference, McLean, VA, Oct. 2001.
29. A.S. Sethi, D. Zhu, and V. Hnatyshin, "*Hierarchical Management of Battlefield Networks with the SHAMAN Management System*," In Final Report (1996-2001) Advanced Telecommunications and Information Distribution Research Program (ATIRP), pp. 7.1-7.28, US Army Research Laboratory, 2001.

30. A.S. Sethi, D. Zhu, V. Hnatyshin, P. Kokati, D.-P. Hsing, and L. Kant, "*Application of the SHAMAN Management System to Configuration Management of Tactical Internets,*" Proc. Fifth ARL/ATIRP Annual Conference, College Park, MD, March 2001.
31. A.S. Sethi, K. Sivakumar, V. Hnatyshin, M. Humphrey, B. Rivera, "*Integrating SHAMAN Management Applications with Battlefield OPNET Simulations,*" Proc. of ARL Federal Laboratory 4<sup>th</sup> Annual Symposium, College Park, MD, March 2000.
32. Vasil Hnatyshin, "*Computer Security: Research of Java Language and its Security Problems,*" Proc. of 11<sup>th</sup> National Conference on Undergraduate Research, Austin TX, April 1997.