

Krishna Kumar Venkatasubramanian

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Ira A. Fulton School of Engineering
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EDUCATION

Arizona State University, Tempe, AZ

Ph.D. Computer Science

Expected: September 2009

Dissertation Title: "Security Solutions for Cyber-Physical Systems"

Arizona State University, Tempe, AZ

M.S. Computer Science

2004

Thesis Title: "A Secure Protocol for Wireless Biomedical Sensors"

Webster University, St. Louis, MO

B.S. Computer Science

2001

(Attended: Geneva Campus, Switzerland)

RESEARCH EXPERIENCES

Graduate Research Associate

2003 - Present

Arizona State University, Tempe, AZ

Advisor: Dr. Sandeep K. S. Gupta

Volunteer

2008

Center for Devices and Radiological Health

Food and Drug Administration, Silver Spring, MD

INDUSTRY EXPERIENCES

Software Engineer Intern

2006

Intelligent Automations Inc., Rockville, MD

PUBLICATIONS

Refereed Articles

- **K. Venkatasubramanian**, A. Banerjee, S. K. S. Gupta, "Green and Sustainable Cyber Physical Security Solutions for Body Area Networks", In Proc of 6th Workshop on Body Sensor Networks (BSN'09), Berkeley, CA, June 2009.
- A. Banerjee, **K. Venkatasubramanian**, S. K. S. Gupta, "Challenges of Implementing Cyber-Physical Security Solutions in Body Area Networks", In Proc. of International Conference on Body Area Networks BodyNets 2009, Los Angeles, CA, April 2009
- **K. Venkatasubramanian**, A. Banerjee, S. K. S. Gupta, "Plethysmogram based Secure Inter-Sensor Communication in Body Area Networks", In Proc. of IEEE Military Communications Conference, San Diego, CA, November 2008.
- **K. Venkatasubramanian**, A. Banerjee, S. K. S. Gupta, "EKG-based Key Agreement in Body Sensor Networks", In Proc. of 2nd Mission Critical Networks Workshop, IEEE Infocom, Phoenix, AZ, April 2008.

- **K. Venkatasubramanian**, S. K. S. Gupta, "Security For Pervasive Health Monitoring Sensor Applications", In Proc. of 4th International Conf. on Intelligent Sensing and Information Processing, Bangalore, India, December 2006 (*Won the Best Paper Award*).
- T. Mukherjee, **K. Venkatasubramanian**, S. K. S. Gupta, "Performance Modeling of Critical Event Management for Ubiquitous Computing Applications", In Proc. of ACM Conf. on Modeling and Simulation of Wireless and Mobile Systems, Terramolino, Spain, October 2006.
- S. K. S. Gupta, T. Mukherjee, **K. Venkatasubramanian**, "Criticality Aware Access Control Model for Pervasive Applications", In Proc. of 4th IEEE Conf. on Pervasive Computing, Pisa, Italy, March 2006.
- S. K. S. Gupta, T. Mukherjee, **K. Venkatasubramanian**, T. Taylor, "Proximity-based Access Control in Smart ED Environments", In Proc. of 1st Ubiquitous & Pervasive Healthcare Workshop, Pisa, Italy, March 2006.
- S. Cherukuri, **K. Venkatasubramanian** and S. K. S. Gupta, "BioSec: A Biometric Based Approach for Securing Communication in Wireless Networks of Biosensors Implanted in the Human Body", In Proc. of 1st International Workshop on Wireless Security and Privacy, IEEE International Conference on Parallel Processing, Kaohsiung, Taiwan, October 2003.

Book Chapters

- **K. Venkatasubramanian**, S. K. S. Gupta, "Chapter 15: Security for Pervasive Healthcare", pp 443-464, In Security in Distributed, Grid, Mobile, and Pervasive Computing, eds. Yang Xiao, Auerbach Publications, CRC Press, April 2007.

Abstracts & Posters

- **K. Venkatasubramanian**, "Poster - Security in Interoperable Medical Devices ", CIMIT Congress, Boston, MA, October, 2008
- **K. Venkatasubramanian**, S. K. S. Gupta "Demo - AYUSHMAN: A Secure, Usable Pervasive Health Monitoring System", In Proc. of the 1st ACM SIGMOBILE International Workshop on Systems and Networking Support for Healthcare and Assisted Living Environments, ACM Mobisys Workshops, Breckenridge, CO, June, 2008.
- **K. Venkatasubramanian**, G. Deng, T. Mukherjee, J. Quintero, V. Annamalai and S. K. S. Gupta, "Poster - Ayushman: A Wireless Sensor Network Based Health Monitoring Infrastructure and Testbed", In Proc. IEEE International Conference on Distributed Computing in Sensor Systems, Marina Del Ray, CA, June 2005.
- S. K. S. Gupta, G. Giorgetti, **K. Venkatasubramanian** "Abstract - Pervasive Point-of-Care Treatment Using AYUSHMAN – An Infrastructure for Wireless Biosensors-Based Health Monitoring", In Proc. Moving Biosensors to Point-of-Care Cancer Diagnostic Conference 2005.

Articles under Review

- **K. Venkatasubramanian**, A. Banerjee, S.K.S. Gupta, "PSKA: Usable and Secure Key Agreement Scheme for Body Area Networks", In. Proc. of IEEE Transactions on Information Technology in Biomedicine Special Issue on Wireless Health.
 - **K. Venkatasubramanian**, S.K.S. Gupta, "Physiological Value Based Efficient Usable Security Solutions for Body Sensor Networks", In. Proc. of ACM Transactions on Sensor Network.
 - **K. Venkatasubramanian**, S.K.S. Gupta, "CAAC - An Adaptive and Proactive Access Control Approach for Emergencies for Smart Infrastructures", In Proc. ACM Transactions on Autonomous and Adaptive Systems Special Issue on Adaptive Security.
 - **K. Venkatasubramanian**, S. K. S. Gupta, R. P. Jetley, P. L. Jones "Security Issues in Interoperable Medical Devices", In Proc. IEEE Engineering, Medicine and Biology Magazine.
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RESEARCH INTERESTS

Cyber-Physical Systems and Security, Body Area Networks Security, Medical Device Security, Wireless Sensor Networks, Pervasive Computing, Access Control systems, Remote Health Monitoring.

PRESENTATIONS

- Invited Talk, University of Pennsylvania, Philadelphia, PA 2009
 - Oral Presentation, IEEE Infocom Workshops on MCN'08, Phoenix, AZ 2008
 - Poster Presentation, CIMIT Congress, Boston, MA 2008
 - Demo Presentation, ACM MobiSys Workshops HealthNet'08, Breckenridge, CO 2008
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SERVICES

- Publicity Chair & Webmaster, 3rd International Conference on Body Area Networks (BodyNets 2008), Tempe, AZ, March 2008
 - Reviewer Percom (2006), BodyNets (2008), JSAC SI on BAN (2008), IEEE Computer (2006), IEEE Communication Letters (2008, 2009)
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AWARDS & HONORS

- My research has been featured in *Discovery Channel* (<http://tinyurl.com/crqqy7>) and *ACM Tech News* (<http://tinyurl.com/c2q3km>).
 - *Co-wrote National Science Foundation grant proposal* which received a \$400,000 award (2008)
 - *Graduate Research Associate-ship* from (2003 – present)
 - *Best Paper Award* in 4th International Conference on Intelligent Sensing and Information Processing, Bangalore, India (2006)
 - *Departmental Honors* for outstanding achievement in the Department of Mathematics & Computer Science, Webster University (2001)
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PROFESSIONAL MEMBERSHIPS

- IEEE Student Member 2007 - 2009
- ACM Student Member 2005 – 2006