Krishna Kumar Venkatasubramanian

Contact Information

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1. Education

December 2009	Ph.D. in Computer Science, Arizona State University, Tempe, AZ
May 2004	M.S. in Computer Science, Arizona State University, Tempe, AZ
June 2001	B.S. in Computer Science, Webster University, St. Louis, MO

2. Academic Experience

09/2019 - present. Assistant Professor. Computer Science and Statistics Department, University of Rhode Island. Kingston, RI. 08/2012 - 06/2019. Assistant Professor. Computer Science Department, Worcester Polytechnic Institute. Worcester, MA.

3. Past Work Experience

10/2009 - 08/2012	Postdoctoral Researcher	University of Pennsylvania	Philadelphia, PA
06/2008 - 07/2008	Volunteer	Food and Drug Administration	Silver Spring, MD
05/2006 - 08/2006	Software Intern	Intelligent Automations, Inc.	Rockville, MD
08/2004 - 09/2009	Research Associate	Arizona State University	Tempe, AZ
01/2003 - 07/2004	Research Assistant	Arizona State University	Tempe, AZ

4. Publications

Books

B1. S. K. S. Gupta, T. Mukherjee, **K. K. Venkatasubramanian**. Body Area Networks: Safety, Security and Sustainability, Cambridge University Press, May 2013.

Book Chapters

- BC1. H. Cai, K. K. Venkatasubramanian.. "Data-Driven Detection of Sensor-Hijacking Attacks on Electrocardiogram Sensors," In The Philosophy of Mission-Oriented Wireless Sensor Networks, ed. Habib Ammari, Springer, 2018.
- BC2. K. K. Venkatasubramanian., S. Nabar, S. K. S. Gupta, R. Poovendran. "Cyber Physical Security Solutions for Pervasive Health Monitoring Systems," In E-Healthcare Systems And Wireless Communications: Current And Future Challenges, ed. Mohamed Watfa, IGI Global, 2012.

BC3. K. K. Venkatasubramanian., S. K. S. Gupta. "Security for Pervasive Healthcare," In Security in Distributed, Grid, Mobile, and Pervasive Computing, ed. Yang Xiao, CRC Press, 2007.

Peer-Reviewed Journal Papers

- J1. B. Lewis, P. Kirupaharan, T-M. Ranalli, and K. Venkatasubramanian. "A3C: An Image-Association-Based Computing Device Authentication Framework for People with Upper Extremity Impairments," ACM Transactions of Accessible Computing (TACCESS), 2024. (Accepted for publication)
- J2. J. S. Lee, E. Browning J. Hokayem, H. Albrechta, G. Goodman, K. Venkatasubramanian, A. Dumas, S. Carreiro, C. O'Cleirigh, P. R. Chai, P. R. "Smartphone and Wearable Device-based Digital Phenotyping to Understand Substance use and its Syndemics," Journal of Medical Toxicology. (Accepted for publication)
- J3. H. Albrechta, G. R. Goodman, E. Oginni, Y. Mohamed, K. Venkatasubramanian, A. Dumas, S. Carreiro, J. S. Lee, T. R. Glynn, C. O'Cleirigh, K. H. Mayer C. B. Fisher. "Acceptance of Digital Phenotyping Linked to a Digital Pill System to Measure PrEP Adherence Among Men who have Sex with Men with Substance Use," PLOS Digital Health. 2024. (Accepted for publication).
- J4. K. Venkatasubramanian, T-M. Ranalli, P. Kirupaharan, D. Solanki, K. Mankodiya. "Understanding the Challenges of Patient Monitoring Technologies for Nurses in a Neonatal Intensive Care Unit", International Journal of Human-Computer Interaction (IJHCI), 2023.
- J5. K. Venkatasubramanian, T-M. Ranalli, J. Lanoie, A. Sinapi, A. Laraw Lama, J. Skorinko, M. Freark, and N. Alterio. "The Design and Prototyping of an App to Teach Adults with Intellectual and Developmental Disabilities to Empower Them Against Abuse," *ACM Transactions on Accessible Computing*, vol. 16 issue 2, pages 1—31, June 2023.
- J6. G. Cay, V. Ravichandran, M. J. Saikia, L. Hoffman, A. Laptook, J. Padbury, A. L. Salisbury, A. Gitelson-Kahn, K. Venkatasubramanian, Y. Shahriari, K. Mankodiya. "An E-Textile Respiration Sensing System for NICU Monitoring: Design and Validation," *Journal of Signal Processing Systems* vol. 94, issue 6 pages 543—557, June 2022.
- J7. H. Cai, K. K. Venkatasubramanian. "Data-Manipulation Attacks on Physiological Sensor Measurements in Wearable Medical Systems," *EURASIP Journal of Information Security*, vol. 2018, issue 13 (21 pages), September 2018.
- J8. K. K. Venkatasubramanian, T. Mukherjee, S. K. S. Gupta. "CAAC An Adaptive and Proactive Access Control Approach for Emergencies for Smart Infrastructures," ACM Transactions on Autonomous and Adaptive Systems (Special Issue on Adaptive Security), vol. 8, issue 4, article 20 (18 pages), January 2014.
- J9. J. Chang, K. K. Venkatasubramanian, A. G. West, I. Lee. "Analyzing and Defending Against Web-based Malware," ACM Computing Surveys, vol. 45, issue 4, article 49 (35 pages), August 2013.

- J10. J. Chang, K. K. Venkatasubramanian, A. G. West, S. Kannan, I. Lee, B. T. Loo, O. Sokolsky. "AS-CRED: Reputation and Alert Service for Inter-domain Routing," *IEEE Systems Journal (Special Issue on Security and Privacy of Complex Systems)*, vol. 7, issue 3, pages 396–409, September 2013.
- J11. A. Wyglinski, X. Huang, T. Padir, L. Lai, T. R. Eisenbarth, K. K. Venkatasubramanian. "Security of Autonomous Systems Employing Embedded Computing and Sensors," *IEEE Micro*, vol. 33, issue 1, pages 80–86, January 2013.
- J12. E. Y. Vasserman, K. K. Venkatasubramanian, O. Sokolsky, I. Lee. "Security and Interoperable Medical Device Systems, Part 2," *IEEE Security and Privacy*, vol. 10, issue 6, pages 70–73, November/December 2012.
- J13. K. K. Venkatasubramanian, E. Y. Vasserman, O. Sokolsky, I. Lee. "Security and Interoperable Medical Device Systems, Part 1," *IEEE Security and Privacy*, vol. 10, issue 5, pages 61–63, September/October 2012.
- J14. A. West, J. Chang, K. K. Venkatasubramanian, I. Lee. "Trust in Collaborative Web Applications," *Elsevier Future Generation Computer Systems (Special Section on Trusting* Software Behavior), vol. 28, issue 8, pages 1238-1251, October 2012.
- J15. A. Banerjee, K. K. Venkatasubramanian, T. Mukherjee, S. K. S. Gupta. "Ensuring Safety, Security and Sustainability of Mission-Critical Cyber Physical Systems," *Proceedings of the IEEE*, vol. 100, issue 1, pages 283–299, January 2012.
- J16. I. Lee, O. Sokolsky, S. Chen, J. Hatcliff, E. Jee, B. Kim, A. L. King, M. Fortino-Mullen, S. Park, A. Roederer, K. K. Venkatasubramanian. "Challenges and Research Directions in Medical Cyber-Physical Systems," *Proceedings of the IEEE*, vol. 100, issue 1, pages 75– 90, January 2012.
- J17. K. K. Venkatasubramanian, S.K.S. Gupta. "Physiological Value Based Efficient Usable Security Solutions for Body Sensor Networks," ACM Transactions on Sensor Networks, vol. 6, issue 4, pages 1–36, July 2010.
- J18. K. K. Venkatasubramanian, A. Banerjee, S.K.S. Gupta. "PSKA: Usable and Secure Key Agreement Scheme for Body Area Networks," *IEEE Transactions on Information Technology* in Biomedicine (Special Issue on Wireless Health), vol. 14, issue 1, pages 60–68, January 2010.
- J19. K. K. Venkatasubramanian, S. K. S. Gupta, R. P. Jetley, P. L. Jones. "Security Issues in Interoperable Medical Devices," *IEEE Pulse*, vol. 1, issue 2, pages 16–27, September/October 2010.

Peer-Reviewed Conferences Papers

C1. K. Venkatasubramanian, T-M. Ranalli "Leveraging technology for post-abuse peer support for people with intellectual and developmental disabilities" ACM CHI Conference on Human Factors in Computing Systems (CHI'24) Late Breaking Work, Honolulu, HI, May 2024. (Accepted for publication)

- C2. T. R. Glynn, S. Khanna, M. A. Hasdianda, J. Tom, K. Ventakasubramanian, A. Dumas, C. O'Cleirigh, C. E. Goldfine, P. Chai. "Informing Acceptability and Feasibility of Digital Phenotyping for Personalized HIV Prevention Among Marginalized Populations Presenting to the Emergency Department," 56th Annual Hawaii International Conference on System Sciences (HICSS), O'ahu, HI, January 2024.
- C3. B. Lewis, T-M. Ranalli, A. Gourley, P. Kirupaharan, K. Venkatasubramanian. " 'I... caught a person casing my house... and scared him off.': The Use of Security-focused Smart Home Devices by People with Disabilities," ACM CHI Conference on Human Factors in Computing Systems (CHI'23), article no. 846, pages 1–16, Hamburg, Germany, April 2023. (Honorable Mention Award: Top 5%)
- C4. K. Venkatasubramanian, T-M. Ranalli. "Designing Post-Trauma Self-Regulation Apps for People with Intellectual and Developmental Disabilities," ACM 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'22), article no. 43, pages 1–14, Athens, Greece, October 2022. [Acceptance Rate: 26.5%]
- C5. B. Lewis, P. Courtemanche, K. Venkatasubramanian. "Sometimes I feel that I'm being left behind': Exploring Computing Device Use by People with Upper Extremity Impairment During the COVID-19 Pandemic," ACM CHI Conference on Human Factors in Computing Systems (CHI'22) Late Breaking Work, article no. 390, pages 1–9, New Orleans, LA, April-May 2022. [Acceptance Rate: 36%]
- C6. T. Howard III, K. Venkatasubramanian, J. Skorinko, Bosma, J. P. Mullaly, B. Kelly, D. Lloyd, M. Wishart, E. Alves, N. Jutras, M. Freark, N. Alterio. "Designing an App to help Individuals with Intellectual and Developmental Disabilities to Recognize Abuse," ACM 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'21), article no. 11, pages 1–14, Virtual Event, October 2021. [Acceptance Rate: 29%]
- C7. K. Venkatasubramanian, J. Skorinko, M. Kobeissi, B. Lewis, N. Jutras, Bosma, J. P. Mullaly, B. Kelly, D. Lloyd, M. Freark, N. Alterio. "Exploring A Reporting Tool to Empower Individuals with Intellectual and Developmental Disabilities to Self-Report Abuse," ACM CHI Conference on Human Factors in Computing Systems (CHI'21), article no. 373, pages 1–13, Yokohama, Japan, May 2021. (Honorable Mention Award: Top 5%)
- C8. B. Lewis, K. Venkatasubramanian. "'I...Got my Nose-Print. But it Wasn't Accurate': How People with Upper Extremity Impairment Authenticate on their Personal Computing Devices," ACM CHI Conference on Human Factors in Computing Systems (CHI'21), article no. 379, pages 1–14, Yokohama, Japan, May 2021. [Acceptance Rate: 26.3%]
- C9. R. Kulman, K. Venkatasubramanian, B. Chapman, S. Carreiro. "Identifying Opioid Withdrawal Using Wearable Biosensors," 54th Hawaii International Conference on System Science (HICSS 54), pages 3583—3592, Maui, HI, January 2021. [Acceptance Rate: 48%]
- C10. R. Singh, B. Lewis, B. Chapman, S. Carreiro, K. K. Venkatasubramanian. "An Approach for Deliberate Non-Adherence Detection during Opioid Abuse Surveillance by a Wearable Biosensor," 12th International Conference on Health Informatics (HealthInf'19), pages 310– 318, Prague, Czech Republic, February, 2019.
- C11. B. Lewis, C. J. Nycz, T. Meier, G. Fischer, K. K. Venkatasubramanian. "Authenticationbased on Biomechanics of Finger Movements captured using Optical Motion-Capture," 13th

International Symposium on Visual Computing (ISVC'18), pages 167–179, Las Vegas, NV, November 2018.

- C12. A. M. Leonard, H. Cai, K. K. Venkatasubramanian, M. M. Ali, T. Eisenbarth. "A Honeypot System for Wearable Networks," 37th IEEE Sarnoff Symposium (SARNOFF), pages 199–201, Newark, NJ, September 2016.
- C13. H. Cai, K. K. Venkatasubramanian. "Detecting Signal Injection Attack-based Morphological Alternations of ECG Measurements," IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), pages 127–135, Washington D.C. May 2016.
- C14. J. Xu, K. K. Venkatasubramanian, V. Syfrla. "A Methodology for Systematic Attack Trees Generation for Interoperable Medical Devices," Annual IEEE Systems Conference (SYSCON), pages 1–7, Orlando, FL, April 2016.
- C15. H. Cai, K. K. Venkatasubramanian. "Detecting Malicious Temporal Alterations of ECG signals in Body Sensor Networks," IEEE International Conference on Network and System Security (NSS), pages 127–135, New York, NY, November 2015.
- C16. C. E. Rogers, A. W. Witt, A. D. Solomon, K. K. Venkatasubramanian. "An Approach for User Identification for Head-Mounted Displays," ACM International Symposium on Wearable Computers (ISWC), pages 143–146, Osaka, Japan, September 2015.
- C17. K. K. Venkatasubramanian, E. Y. Vasserman, V. Sfyrla, O. Sokolsky I. Lee. "Requirement Engineering for Functional Alarm System for Interoperable Medical Devices," International Conference on Computer Safety, Reliability & Security (SAFECOMP) pages 252–266, Delft, The Netherlands, September 2015.
- C18. R. Saeedi, J. Purath, K. K. Venkatasubramanian, H. Ghasemzadeh. "Toward Seamless Wearable Sensing: Automatic On-Body Sensor Localization for Physical Activity Monitoring," 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), pages 5385–5388, Chicago, IL, Aug 2014.
- C19. C. R. Taylor, K. K. Venkatasubramanian, C. A. Shue. "Understanding the Security of Interoperable Medical Devices using Attack Graphs," 3rd ACM International Conference on High Confidence Networked Systems (HiCoNS), pages 31–40, Berlin, Germany, April 2014.
- C20. R. Machado, F. Usher, E. Frenn, K. K. Venkatasubramanian. "Establishing Trust in a Vehicular Network," IEEE Vehicular Networking Conference (VNC), pages 194–197, Boston, MA, December 2013.
- C21. A. Banerjee, S. K. S. Gupta, K. K. Venkatasubramanian. "PEES: Physiology-based End-to-End Security for mHealth," 4th Annual Wireless Health Conference (WH), pages 1–8, Baltimore, MD, article 2, November 2013.
- C22. J. Chang, P. Gebhard, A. Haeberlen, Z. Ives, I. Lee, O. Sokolsky, K. K. Venkatasubramanian. "TrustForge: Flexible Access Control for Collaborative Crowd-Sourced Environment," 11th International Conference on Privacy, Security and Trust (PST), pages 291–300, Tarragona, Spain, July 2013.
- C23. C. Liao, J. Chang, I. Lee, K. K. Venkatasubramanian. "A Trust Model for Vehicular Network-Based Incident Reports," IEEE 5th International Symposium on Wireless Vehicular Communications (WiVeC), pages 1–5, Dresden, Germany, June 2013.

- C24. J. Chang, K. Venkatasubramanian, C. Enyioha, S. Sundaram, G. J. Pappas, I. Lee. "HMM-Based Characterization Of Channel Behavior For Networked Control Systems," 1st International Conference on High Confidence Networked Systems (HiCons), pages 11–20, Beijing, China, April 2012.
- C25. G. Varsamopoulos, S. K. S. Gupta, A. Banerjee, K. K. Venkatasubramanian. "Integrating Cyber-Physical Research and Thinking in College Education," International Symposium on Integrating Research, Education, and Problem Solving (IREPS), pages 1–6, Singapore, November, 2011.
- C26. A. G. West, J. Chang, K. K. Venkatasubramanian, O. Sokolsky, I. Lee. "Link Spamming Wikipedia for Profit," 8th Annual Collaboration, Electronic Messaging, Anti-Abuse, and Spam Conference (CEAS), pages 152–161, Perth, Australia, September 2011. (Co-Best Paper Award).
- C27. D. Arney, K. K. Venkatasubramanian, O. Sokolsky, I. Lee. "Biomedical Devices and Systems Security," 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), pages 2376–2379, Boston, MA, August/September 2011.
- C28. J. Chang, K. K. Venkatasubramanian, A. G. West, S. Kannan, B. T. Loo, O. Sokolsky, I. Lee. "AS-TRUST: A Trust Quantification Scheme for Autonomous Systems in BGP," 4th International Conference on Trust and Trustworthy Computing (TRUST), pages 262– 276, Pittsburgh, PA, June 2011.
- C29. S. Sundaram, J. Chang, K. K. Venkatasubramanian, C. Eniyoha, I. Lee, G. Pappas. "Reputation-based Networked Control with Data-Corrupting Channels," 14th International Conference on Hybrid Systems: Computation and Control (HSCC), pages 291–300, Chicago, IL, April 2011.
- C30. A. Banerjee, **K. K. Venkatasubramanian**, S. K. S. Gupta. "Challenges of Implementing Cyber-Physical Security Solutions in Body Area Networks," International Conference on Body Area Networks (BodyNets), pages 980–985, Los Angeles, CA, April 2009.
- C31. K. K. Venkatasubramanian, A. Banerjee, S. K. S. Gupta. "Plethysmogram based Secure Inter-Sensor Communication in Body Area Networks," IEEE Military Communications Conference (MILCOM), pages 1–7, San Diego, CA, November 2008.
- C32. K. K. Venkatasubramanian, S. K. S. Gupta. "Security For Pervasive Health Monitoring Sensor Applications," 4th International Conference on Intelligent Sensing and Information Processing (ICSIP), pages 197–202, Bangalore, India, December 2006. (Best Paper Award)
- C33. T. Mukherjee, K. K. Venkatasubramanian, S. K. S. Gupta. "Performance Modeling of Critical Event Management for Ubiquitous Computing Applications," ACM Conference on Modeling and Simulation of Wireless and Mobile Systems (MSWIM), pages 12–19, Torremolinos, Spain, October 2006.
- C34. S. K. S. Gupta, T. Mukherjee, K. Venkatasubramanian. "Criticality Aware Access Control Model for Pervasive Applications," 4th Annual IEEE International Conference on Pervasive Computing and Communications (PERCOM), pages 257–261, Pisa, Italy, March 2006.

Peer-Reviewed Workshop Papers

- W1. B. Lewis, J. Hebert, K. Venkatasubramanian, M. Provost, K. Charlebois. "A New Authentication Approach for People with Upper Extremity Impairment," 4th IEEE PERCOM Workshop on Security Privacy and Trust in the Internet of Things (SPT-IOT 2020) held in conjunction with IEEE PERCOM, Austin, TX, March 2020.
- W2. K. Heather, K. Shah, K. K. Venkatasubramanian, H. Cai, K. Hoyme, M. Seeberger, G. Wiechman. "A Novel Authentication Biometric for Pacemakers," 2018 Third IEEE International Workshop on Security, Privacy, and Trustworthiness in Medical Cyber-Physical Systems (MedPST) held in conjunction with IEEE/ACM CHASE, Washington, DC, September 2018.
- W3. K. K. Venkatasubramanian, A. Banerjee, S. K. S. Gupta, R. Walls. "A Cyber-Physical Approach to Trustworthy Operation of Health Monitoring Systems," Workshop in Trusted Computing in Distributed Hybrid Systems held in conjunction with IEEE ATC, San Francisco, CA, August 2017.
- W4. H. Cai, T. Yun, J. Hester, K. K. Venkatasubramanian, "Deploying Data-Driven Security Solutions on Resource-Constrained Wearable IoT System," International Workshop on the Internet of Things Computing and Applications held in conjunction with IEEE ICDCS, Atlanta, GA, June 2017.
- W5. H. Cai, **K. K. Venkatasubramanian**. "Fusion of electrocardiogram and arterial blood pressure signals for authentication in wearable medical systems," Workshop on Cyber Physical Systems Security held in conjunction with IEEE CNS, Philadelphia, PA, October 2016.
- W6. D. Robertson, C. A. Shue, K. K. Venkatasubramanian, C. R. Taylor. "Bandwidth Aggregation in Allied WiFi Routers," Management of Emerging Networks and Services (MENS) Workshop, held in conjunction with IEEE Globecom, Austin, TX, December 2014.
- W7. R. Danas, D. Lally, N. Miller, J. Synott, C. A. Shue, H. Ghasemzadeh, K. K. Venkatasubramanian. "Designing User-specific Plug-n-Play into Body Area Networks," 4th Workshop on Pervasive Wireless Healthcare held in conjunction with ACM MobiHoc, Philadelphia, PA, August 2014.
- W8. D. Foo Kune, K. K. Venkatasubramanian, E.Vasserman, I. Lee, Y. Kim. "Toward a safe Integrated Clinical Environment: A communication security perspective," Workshop on Medical Communication Systems held in conjunction with ACM SIGCOMM, Helsinki, Finland, August 2012.
- W9. J. Chang, K. K. Venkatasubramanian, A. G. West, S. Kannan, O. Sokolsky, M.-J. Kim, I. Lee. "ToMaTo: A Trustworthy Code Mashup Development Tool," 5th International Workshop on Web APIs and Service Mashups in conjunction with European Conference on Service-Oriented and Cloud Computing, Lugano, Switzerland, September 2011.
- W10. K. K. Venkatasubramanian, A. Banerjee, S. K. S. Gupta. "Green and Sustainable Cyber Physical Security Solutions for Body Area Networks," 6th International Workshop on Body Sensor Networks (BSN), Berkeley, CA, June 2009.
- W11. K. K. Venkatasubramanian, A. Banerjee, S. K. S. Gupta. "EKG-based Key Agreement in Body Sensor Networks," 2nd Mission Critical Networks Workshop held in conjunction with IEEE INFOCOM, Phoenix, AZ, April 2008.

- W12. S. K. S. Gupta, T. Mukherjee, K. K. Venkatasubramanian, T. Taylor. "Proximity-based Access Control in Smart ED Environments," 1st Ubiquitous & Pervasive Healthcare Workshop in conjunction with IEEE PERCOM, Pisa, Italy, March 2006.
- W13. S. Cherukuri, K. K. Venkatasubramanian, S. K. S. Gupta. "BioSec: A Biometric Based Approach for Securing Communication in Wireless Networks of Biosensors Implanted in the Human Body," 1st International Workshop on Wireless Security and Privacy held in conjunction with IEEE ICPP, Kaohsiung, Taiwan, October 2003.

Invited Papers

- I1. H. Cai, K. K. Venkatasubramanian. "Patient Identity Verification based on Physiological Signal Fusion," 2017 Second IEEE International Workshop on Security, Privacy, and Trustworthiness in Medical Cyber-Physical Systems (MedPST) held in conjunction with IEEE/ACM CHASE, Philadelphia, PA, July 2017.
- K. K. Venkatasubramanian. "The Chronicles of Interoperability: Failures, Safety, and Security," *Biomedical Instrumentation & Technology: Cybersecurity In Healthcare*, vol. 48, issue s1 pages 19–24, Spring 2014.

Peer-Reviewed Posters, Abstracts, and Demo Papers

- MS1. K. K. Venkatasubramanian, J. Skorinko, N. Jutras, N. Carvajal-Erker, L. Padir. "Exploring the Requirements of Abuse Reporting for Persons with Intellectual and Developmental Disabilities," 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'21), Virtual Event, October 2021. [Poster]
- MS2. K. K. Venkatasubramanian, J-H. Kim, O. Sokolsky, V. Sfyrla, E. Y. Vasserman, I. Lee. "Detecting Interoperability Failures in Interoperable Medical Device System," Workshop on Monitoring and Testing of Cyber-Physical Systems held in conjunction with CPSWeek, Pittsburgh, PA, April 2017. [Abstract]
- MS3. N. Brown, N. Patel, P. Plenefisch, A. Moghimi, T. Eisenbarth, C. A. Shue, K. K. Venkatasubramanian. 'Scream: Sensory Channel Remote Execution Attack Methods," In Usenix Security, Austin, TX, August 2016. [Poster]
- MS4. H. Cai, **K. K. Venkatasubramanian**. "Detecting Malicious Morphological Alterations of ECG Signals in Body Sensor Networks," ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), CPS Week, Seattle, WA, April 2015. [Poster]
- MS5. J. Xu, V. Sfyrla, **K. K. Venkatasubramanian**. "WiP Methodology for Generating Attack Trees for Interoperable Medical Devices," ACM International Conference on Cyber Physical Systems (ICCPS), CPS Week, Seattle, WA, April 2015. [Abstract]
- MS6. K. K. Venkatasubramanian, C. A. Shue. 'Adaptive Information Security in Body Sensor-Actuator Networks," USENIX Summit on Health Information Technologies (HealthTech), San Diego, CA, Aug 2014. [Abstract]
- MS7. K. K. Venkatasubramanian, E. Vasserman, O. Sokolsky, I. Lee. "Functional Alarms for Systems of Interoperable Medical Devices," 15th IEEE International Symposium on High Assurance Systems Engineering (HASE), Miami, FL, January 2014. [Abstract]

- MS8. K. K. Venkatasubramanian. "Security in Interoperable Medical Devices," CIMIT Congress, Boston, MA, October 2008. [Poster]
- MS9. K. K. Venkatasubramanian, S. K. S. Gupta. "AYUSHMAN: A Secure, Usable Pervasive Health Monitoring System," 1st ACM SIGMOBILE International Workshop on Systems and Networking Support for Healthcare and Assisted Living Environments held in conjunction with ACM Mobisys, Breckenridge, CO, June 2008. [Demo]
- MS10. K. K. Venkatasubramanian, G. Deng, T. Mukherjee, J. Quintero, V. Annamalai and S. K. S. Gupta, "AYUSHMAN: A Wireless Sensor Network Based Health Monitoring Infrastructure and Testbed," IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), Marina Del Ray, CA, June 2005. [Poster]
- MS11. S. K. S. Gupta, G. Giorgetti, **K. K. Venkatasubramanian**. "Pervasive Point-of-Care Treatment Using AYUSHMAN: An Infrastructure for Wireless Biosensors-Based Health Monitoring," Moving Biosensors to Point-of-Care Cancer Diagnostic Conference, June 2005. [Abstract]

5. Funding (2019-present)

Total extramural funding brought to URI as a Principal Investigator or Co-Principal Investigator: \$3 million+

Current grants

- G1. Principal Investigator at URI, MINDER: Wearable Sensor-Based Detection of Digital Biomarkers of Adherence to Medications for Opioid Use Disorder, Subaward from the University of Massachusetts Medical School (UMMS) as part of an NIH R01 grant Amount: \$1.6 million (URI share) (6/2023-5/2027) Project Principal Investigator: Stephanie Carreiro, UMMS; Other Principal Investigator: Kunal Mankodiya, URI; Co-Principal Investigator: Dhaval Solanki, URI
- G2. Principal Investigator at URI, Smart Steps: A Context-Aware Adherence Intervention to Improve PrEP Adherence Among Men who have Sex with Men (MSM) with Substance Use Disorder, Subaward from Brigham and Women's Hospital (BWH) as part of an NIH Avenir grant

Amount: **\$409,722 (URI share)** (4/2022-3/2026) Project Principal Investigator: Peter Chai, BWH

- G3. Principal Investigator, Technology to Facilitate Dyadic Peer Support and Autonomous Self Care for People with Intellectual Disabilities Post Trauma, Massachusetts Disabled Persons Protection Commission (DPPC) Amount: \$250,833 (11/2021-9/2024)
- G4. Co-Principal Investigator, EAGER: Towards a Multimodal Smart Textile Medical Monitoring System For Neonatal ICUs, National Science Foundation (NSF) SCH Amount: \$299,998 (10/2021-9/2023). Project Principal Investigator: Kunal Mankodiya, URI; Co-Principal Investigator: Yalda Shahriyari, URI

- G5. Principal Investigator, SaTC: CORE: Small: A Suite of Authentication Solutions for Individuals with Upper Extremity Impairment, National Science Foundation (NSF) Secure and Trustworthy Cyberspace (SaTC) Amount: \$499,995 (7/2019-09/2024) [no cost extension])
 - *REU Supplement*, National Science Foundation (NSF) Secure and Trustworthy Cyberspace (SaTC) Amount: **\$16,000** (5/2020-8/2020)

Completed grants

PG1. Principal Investigator, Technology Enhanced Actions in Massachusetts Adult Protective Services (TEAM APS): Recognize, Report, and Respond (R3), Massachusetts Disabled Persons Protection Commission (DPPC) Amount: \$270,235 (9/2019-8/2023)

6. Impact and Recognition

Honors and Awards

- HS1. Honorable Mention Award at the ACM CHI Conference on Human Factors in Computing Systems (CHI '23), Hamburg, Germany, 2023
- HS2. Honorable Mention Award at the ACM CHI Conference on Human Factors in Computing Systems (CHI '21), Yokohama, Japan, 2021
- HS3. Co-Best Paper Award at the 8th Annual Collaboration, Electronic Messaging, Anti-Abuse, and Spam Conference (CEAS' 11), Perth, Australia, 2011
- HS4. Best Paper Award at the 4th International Conference on Intelligent Sensing and Information Processing (ICISIP '06), Bangalore, India, 2006
- HS5. Departmental Honors for outstanding achievement in the Department of Mathematics & Computer Science, Webster University, 2001

Press Coverage

- PC1. My NIH R01 grant in collaboration with University of Massachusetts Medical School and URI Engineering on designing a wearable system for opioid abuse treatment management was covered in the Rhode Island Medical Journal November 2023 (http://rimed.org/rimedicaljournal/2023/11/2023-11-76-news.pdf).
- PC2. My research on developing the R3 app to teach people with intellectual and developmental disability about various forms of abuse was covered in at the following venues:
 - Boston Globe's 5 apps to watch in Rhode Island in 2024 [December 2023] (https://www.bo stonglobe.com/2023/12/25/metro/5-tech-startups-apps-watch-rhode-island-2024/)
 - WPRI-12 News Providence [July 2023] (https://www.wpri.com/new-england/massachus etts/new-app-hopes-to-curb-abuse-of-those-with-intellectual-developmental-d isabilities/)
 - The Boston Globe [July 2023] (https://www.bostonglobe.com/2023/07/17/metro/new-a pp-allows-people-with-disabilities-report-respond-abuse/)

- Providence Business News [July 2023] (https://pbn.com/uri-developed-app-to-help-p eople-with-developmental-disabilities-recognize-report-abuse/)
- ACM Tech News [July 2023] (https://technews.acm.org/archives.cfm?fo=2023-07-jul /jul-26-2023.html)
- PC3. My research on developing an developing authentication tool for people with upper extremity impairment has been covered by the Boston Globe in **December 2020** (https: //www.bostonglobe.com/2020/12/28/metro/uri-researcher-aims-help-people-with-dis abilities-access-computers-smartphones/). The article was also published in the print version of newspaper on January 4, 2021
- PC4. I was featured in the URI Momentum magazine (Fall 2020 issue) in an article on transition to virtual classroom during COVID-19 in **December 2020** (https://web.uri.edu/resear ch-admin/externalrelations/current-research-magazine/)
- PC5. I was interviewed for the 5pm news broadcast from *Providence's NBC affiliate*, **WJAR**. The story discussed on the implications of Apple and Google's COVID-19 exposure tracking app, **May 2020**. https://turnto10.com/news/local/as-tech-giants-collaborate-on-con tact-tracing-system-concerns-over-privacy-arise
- PC6. My research on developing an abuse reporting tool for people with intellectual and developmental disability was covered in **February 2020** at the following venues:
 - The Boston Globe (https://www.bostonglobe.com/2020/02/28/metro/if-we-dont-tak e-action-who-will/)
 - Boston Herald (https://www.bostonherald.com/2020/02/21/team-of-academics-worki ng-to-develop-app-to-help-people-with-disabilities-report-abuse/)
 - Providence Business Network (https://pbn.com/uri-professor-developing-abuse-rep orting-app-to-help-people-with-intellectual-disabilities/)
- PC7. I was interviewed for an article titled "Say Goodbye to Your Keyboard" for *HP Enterprises Insights magazine*. The story discussed how the advent of IoT and wearables will bring about new ways of interacting with them, **August 2017**. https://insights.hpe.com/art icles/say-goodbye-to-your-keyboard-1708.html
- PC8. I was interviewed for the 11pm news broadcast from Boston's CBS affiliate, WBZ. The story discussed "Internet of Things" devices and their cybersecurity risks, Dec. 2015. http://boston.cbslocal.com/2015/12/10/i-team-wifi-enabled-toys-could-put-your-pri vacy-at-risk/
- PC9. I was interviewed by *Clinical innovations and Technology magazine* about my body area networks research, April 2013. http://www.clinical-innovation.com/topics/technolog y-management/medical-body-area-networks-challenges-and-opportunities
- PC10. My research has been mentioned in *IEEE Engineering in Medicine and Biology journal* article on wearable technology vol. 29, issue 3, **May/Jun 2010**
- PC11. My research has been featured on Discovery Channel's Discovery Tech website, 2009
- PC12. My research has been featured in ACM Tech News, 2007

Apps Released

- AP1. My research (supported by the grant PG1) on empowering people with intellectual and developmental disabilities (I/DD) to recognize and report abuse has resulted in an app called R3: Recognize, Report, Respond, which is available as of **June 2023** on the Apple and Amazon app store.:
 - The Apple app store (https://apps.apple.com/us/app/r3-recognize-report-respond /id6446331248)
 - The Amazon app store (https://www.amazon.com/Disabled-Persons-Protection-Com mission-Recognize/dp/BOC6VG4YNC/

7. Courses Taught (2019-present)

- Co1. CSC212: Data Structures and Abstractions (undergraduate)
- Co2. CSC592: Human Computer Interaction (graduate)
- Co3. CSC320: Social Issues in Computing (undergraduate)
- Co4. CSC492: Human Computer Interaction (undergraduate)

8. Professional Society Memberships and Offices

- PS1. Member. Association of Computing Machinery (ACM)
- PS2. Member. Special Interest Group on Computer Human Interactions (SIGCHI)
- PS3. Member. Special Interest Group on Accessible Computing (SIGACCESS)
- PS4. Member. Institute of Electrical and Electronics Engineers (IEEE)

9. Invited Talks

- IT1. January 2021, Invited Speaker, State of Connecticut Sexual Abuse Task Force, (Virtual Event)
- IT2. February 2019, Invited Speaker, Smart Health Institute Consortium, San Diego State University, San Diego, CA
- IT3. October 2018, Keynote Speaker, 12th Central Area Networking and Security Workshops (CANSec), Manhattan, KS
- IT4. April 2018, Invited talk, University of Massachusetts at Dartmouth, Dartmouth, MA
- IT5. June 2015, Invited Talk, EPFL, Lausanne, Switzerland
- IT6. Nov 2014, Invited Talk, Dartmouth College, Hanover, NH
- IT7. Oct 2014, Invited Talk, University of South Florida, Tampa, FL
- IT8. June 2014, Invited Talk, New England Area Librarian Science Boot Camp, Storrs, CT

- IT9. April 2014, Invited Talk, University of Massachusetts at Lowell, Lowell, MA
- IT10. March 2014, Invited Talk, University of Massachusetts, Dartmouth, Dartmouth, MA

10. Panels

- PL1. Panelist, Building Your Collaborator Network, American College of Medical Toxicology/The ANTIDOTE Institute Interactive Didactic Series, (Virtual), September 2023
- PL2. Panel Member. "Showcasing R3: An App That Teaches People With Intellectual And Developmental Disabilities About Abuse," North American Conference on Adult Protective Services (NAPSA), Boston, MA, August 2023
- PL3. Panel Member. "Evaluating an App That Teaches People With Intellectual and Developmental Disabilities About Abuse," North American Conference on Adult Protective Services (NAPSA), Grand Rapids, MI, September 2022
- PL4. Panel Member. "Co-Designing an App With People With Intellectual And Developmental Disabilities That Teaches The Community About Abuse," North American Conference on Adult Protective Services (NAPSA), San Diego, CA, November 2021
- PL5. Panel Member. "Social Issues and Technology," CS4RI Summit. Virtual Event, December 2020.
- PL6. Panel Member. "Reports from Inside: Massachusetts Leading Cybersecurity R&D Initiatives," MA Cyber Security Forum, Boston, MA, September 2018
- PL7. Panel Member. "Improving Patient Care With Medical Robotics," LiveWorx Technology Conference, Boston, MA, May 2017
- PL8. Panel Member. "Internet of Things: Where Things Stand?," Matlab Research Summit, Netwon, MA, June 2016
- PL9. Organizer and Moderator. "Securing Medical Cyber-Physical Systems: Challenges and Future Directions," 10th International Symposium on Medical Information and Communication Technology (ISMICT'16), Worcester, MA, March 2016
- PL10. Organizer and Moderator. "Security in Medical Cyber Physical Systems," ACSAC 2013, New Orleans, LA, December 2013

11. Editorial and Referee Activities (2019-present)

Journal Editorship

- JE1. Review Editor, Frontiers in Electronics Wearable Electronics, 2020 present
- JE2. Associate Editor, EURASIP Journal on Information Security, 2018 2021.
- JE3. Associate Editor. Elsevier Smart Health Journal, 2017 2023
- JE4. Editorial Board Member. International Journal of Security and Networks (IJSN), 2015 2021

Technical Program Committee Member

- TC1. ACM SIGACCESS Conference on Computers and Accessibility Experience Reports
- TC2. ACM/IEEE Conference on Connected Health (CHASE)
- TC3. International Symposium on Visual Computing
- TC4. International Workshop on Data Analytics for Smart Health: DASH
- TC5. IEEE Workshop on Smart Service Systems
- TC6. Transdisciplinary AI conference
- TC7. IEEE COMPSAC, Smart and Connected Health Symposium
- TC8. International Conference on Communication Systems & Networks (COMSNETS)
- TC9. IEEE International Conference on Security and Privacy for Body Sensor Networks

Conference Reviewer

- CA1. IFIP International Conference of Technical Committee 13 (Human- Computer Interaction) - Interact
- CA2. ACM CHI Conference on Human Factors in Computing Systems
- CA3. ACM SIGACCESS Conference on Computers and Accessibility
- CA4. ACM ACM International Conference on Multimodal Interaction

Journal Reviewer

- **RE1. SAGE Field Methods**
- RE2. MDPI Applied Science
- **RE3.** IEEE Internet of Things Journal
- RE4. ACM Transactions on Computing for Healthcare
- **RE5.** MDPI Sensors

Grant Proposal Reviewer

- GR1. National Science Foundation (NSF): Panelist (2019, 2020, 2021)
- GR2. National Institute on Disability, Independent Living, and Rehabilitation Research (NI-DILRR): Panelist (2021)

12. Service to Department of Computer Science and Statistics at URI

- SD1. Director, Graduate Committee Computer Science, AY 2023-24
- SD2. Member, Faculty Search Committee, AY 2022-23
- SD3. Member, Graduate Committee, AY 2020-21 AY 2022-23
- SD4. Member, Diversity Committee, AY 2020-21 AY 2022-23
- SD5. Member, Ad-hoc Data Science Committee, AY 2020-21, AY 2021-22
- SD6. Member, Undergraduate Committee, AY 2019-20
- SD7. Member, Faculty Search Committee, AY 2019-20

13. Other Service

OTH1. Board Member, The Rhode Island Council on Assistive Technology (RICAT), 2022-Present