

# Brent Lagesse, Ph.D.

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## Curriculum Vitae

### Summary

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I am a cyber security research scientist at Oak Ridge National Laboratory with a research focus in security in cyber-physical and pervasive systems.

### Education

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- **University of Texas at Arlington** **Aug 2006 – Aug 2009**  
**Degree:** Ph.D., Computer Science  
**Thesis Topic:** Autonomic Trust Management in Dynamic Systems  
**Advisors:** Mohan Kumar and Matthew Wright
- **University of Texas at Arlington** **Aug 2004 – May 2006**  
**Degree:** M.S., Computer Science  
**Specialization:** Networking  
**Thesis Topic:** Dynamic Formation of Software Agent Communities  
**Advisor:** Mohan Kumar
- **Illinois Institute of Technology** **Aug 2000 – May 2004**  
**Degree:** B.S., Computer Engineering with Honors

### Employment

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- **Oak Ridge National Laboratory** **Sept 2009 – Present**  
*Cyber Security Research Scientist*  
Research focused on providing secure and reliable access to critical information on systems with intermittent connectivity and untrusted nodes. Recent research topics include Advanced Metering Infrastructure for the smart grid, privacy for wireless medical systems, key distribution in dynamic systems, and forensics in cyber-physical systems.
- **University of Maryland University College** **Sept 2010 – Present**  
*Adjunct Professor*  
Teaching distance-learning courses in cyber security in the Graduate School of Management and Technology.
- **University of Texas at Arlington** **June 2008 – Aug 2009**  
*Research Assistant*

Research for Pervasively Secure Infrastructures and Collaborative Virtual Observation projects. Research involved using game-theoretic approaches to securely and reliably access resources and dynamically compose services in hostile, mobile, and open environments.

- **Lawrence Livermore National Laboratory** **May 2006 – May 2009**  
*Student Scholar*  
Research and development for the ACATS and ACATS3D simulation, control, and visualization projects. Researched and developed methods of representing uncertain information in 3D environments. Using Qt, DI-Guy, AI-Implant, and Delta3D to create interaction between the user and simulation information.
- **Lockheed Martin Missiles & Fire Control** **June 2005 – May 2006**  
*Engineering Intern*  
Software development for the TOPSCENE project including the TS48 3D Visualization System and TOPCOP Control System. Integrated DIS, CIGI, and HLA simulation feeds into a 3D environment. Used OneSAF and JSAF to validate visualization functionality.
- **Illinois Institute of Technology** **June 2003 – Aug 2003**  
*Research Assistant*  
Research and development of the PerIce context-aware course evaluation software. Implemented prototype in J2ME running on the Sharp Zaurus PDA and interfacing with server and desktop machines

## **Publications**

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- **Refereed Publications**
  1. Brent Lagesse. *Analytical Evaluation of P2P Reputation Mechanisms*. International Journal of Communication Networks and Distributed Systems, To Appear.
  2. James Horey, Brent Lagesse. *Challenges in Scheduling Aggregation in CyberPhysical Information Processing Systems*. International Workshop on Knowledge Discovery Using Cloud and Distributed Computing Platforms, To Appear.
  3. Brent Lagesse. *Privacy Challenges for Wireless Medical Devices*. USENIX Workshop on Health, Security, and Privacy, 2010.
  4. Brent Lagesse, Mohan Kumar, Mihai Lazarescu, Svetha Venkatesh. *Augmenting Trust Mechanisms with Social Networks*. ACM Cyber Security and Information Intelligence Workshop, 2010.
  5. Brent Lagesse, Mohan Kumar, Matthew Wright. *ReSCo: A Middleware Component for Reliable Service Composition in Pervasive Systems*. Middleware Support for Pervasive Computing Workshop, 2010.
  6. Brent Lagesse, Mohan Kumar, Justin Mazzola Paluska, Matthew Wright. *DTT: A Distributed Trust Toolkit for Pervasive Systems*. IEEE Pervasive Computing and Communications Conference, 2009.

7. Brent Lagesse. *Trust and Security in Dynamic Systems*. IEEE Pervasive Computing and Communications Conference, PhD Forum, 2009.
  8. Brent Lagesse, Mohan Kumar, Matthew Wright. *AREX: An Adaptive System for Secure Resource Access in Mobile P2P Systems*. IEEE Peer to Peer Computing Conference, 2008.
  9. Brent Lagesse, Mohan Kumar. *A Novel Utility and Game-Theoretic Based Model for Mobile P2P Systems*. Mobile Peer to Peer Workshop, 2008.
  10. Brent Lagesse, Mohan Kumar. *UBCA: Utility-Based Clustering Architecture for Peer-to-Peer Systems*. International Conference on Distributed Computing Systems: Workshop on Mobile and Distributed Computing, 2007.
  11. Brent Lagesse. *A Game-Theoretical Model for Task Assignment in Project Management*. IEEE International Conference on Management of Innovation and Technology, 2006.
- **Selected Demo/Poster Sessions**
    1. Nathanael Paul, Brent Lagesse. *Mitigating Solutions in Insulin Pump System Security*. Diabetes Technology Meeting, 2010.
    2. Brent Lagesse, Matthew Wright, Mohan Kumar. *Utilizing Resources in Hostile Environments*. DIMACS/DyDAn Workshop: Mathematical & Computational Methods for Information Security, 2007.
    3. Swaroop Kalasapur, Kumarvel Senthivel, Brent Lagesse, Mohan Kumar. *Just-in-time Service Composition in Pervasive Environments*, IEEE Pervasive Computing and Communications Conference, 2006.
  - **Invited Papers**
    1. Brent Lagesse. *Challenges in Securing the Interface Between the Cloud and Mobile Systems*. Pervasive Communities and Service Clouds, To Appear.
  - **Invited Talks**
    1. Brent Lagesse. *Challenges in Securing Pervasive Systems*. ECE Research Seminar. Illinois Institute of Technology, November 2010.

## Teaching Experiences

- **University of Maryland University College** **Sept 2010 – Present**  
**Position:** Adjunct Professor  
**Responsibilities:** Teach distance-learning graduate courses in cyber security.  
**Classes Taught:** Cyberspace and Cybersecurity
- **Trinity River Mission** **Jan 2008 – May 2009**  
**Position:** Volunteer  
**Responsibilities:** Create and teach classes designed to promote interest and education in computer science amongst underprivileged 6-12 graders  
**Classes Taught:** Programming with Alice, Introduction to Java, Introduction to PHP

- **University of Texas at Arlington** **Aug 2006 – June 2008**  
**Position:** Assistant Instructor  
**Responsibilities:** Organize and teach courses  
**Classes Taught:** Introduction to Programming in C
- **University of Texas at Arlington** **Aug 2004 – June 2005**  
**Position:** Teaching Assistant  
**Responsibilities:** Instruct, write, and grade labs  
**Classes Taught:** Introduction to Programming in C, Introduction to Engineering, Computer Literacy

## Select Awards and Honors

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- NSF Travel Grant for IEEE Percom Conference, 2005, 2007-2009
- John S. Schuchman Outstanding Doctoral Student Award, 2007-2008
- University Scholar (top 1% of UT Arlington), 2006-2007
- National Physical Science Consortium Fellow, 2006-2008
- Verizon Outstanding Master's Thesis, 2005-2006
- Camras/NEXT Full Scholarship for study at Illinois Institute of Technology, 2000

## Professional Activities

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- **Program Chair:** ACM CCS Workshop on Insider Threats
- **Research Area Chair:** MOBILITY (Context-aware, media, and pervasive computing)
- **Technical Program Committees:** IEEE Pervasive Computing and Communications Conference, IEEE Middleware Support for Pervasive Computing Workshop, IEEE/IFIP Embedded and Ubiquitous Computing Conference (Mobile and Context-aware Computing & Middleware for Embedded and Ubiquitous Computing tracks), MOBILITY, MultiStream, IEEE/FTRA Multimedia and Ubiquitous Engineering
- **Reviewer:** Elsevier Computer Communications Journal; Elsevier Pervasive and Mobile Computing Journal; IEEE Pervasive Computing and Communications Conference (Percom); ACM Conference on Ubiquitous Computing (UBICOMP); Intelligent Sensors, Sensor Networks, and Information Processing Conference (ISSNIP); Hawaiian International Conference on System Science (HICSS); International World Wide Web Conference (WWW); IEEE Global Communications Conference (GC); ACM Security of Ad Hoc and Sensor Networks (SASN)