

George R. Louthan IV

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Education

- **University of Tulsa** Tulsa, OK
 - M.S. Computer Science May 2011
(expected)
 - B.S. Computer Science May 2009
 - B.S. Mathematics May 2009

Certifications

- **CNSS 4011-4016** Tulsa, OK
Issued by the University of Tulsa. National Information Assurance Training Standards: 2006 - 2011
 - 4011** for Information Systems Security Professionals
 - 4012** for Senior Systems Managers
 - 4013** for System Administrators
 - 4014** for Information Systems Security Officers (Expected 2011)
 - 4015** for Systems Certifiers
 - 4016** for Risk Analysts

Employment History

- **University of Tulsa** Tulsa, OK
 - Small research university with a prestigious information security program and extensive research operations under its Institute for Information Security, an NSA/CSS Center of Excellence in information assurance.
 - Graduate Research Assistant** May 2009 - Present
 - Part of TU's Institute for Information Security's security engineering research initiative. Serving as the student lead for a formal methods research project. Also collaborating with researchers in cyber security training, information visualization, and critical infrastructure protection initiatives. Peer-reviewed publications in cyber security education, network intelligence, and secure collaboration.
 - Also led the development and deployment of the Institute's IT infrastructure and supervising its upkeep (approximately 40 workstations and 5 servers).
 - Graduate Teaching Assistant** Jan 2010 - May 2010
 - Taught a sophomore-level programming lab in the Java language. Developed supplementary course materials on code style, algorithms, documentation, and best practices.
 - Undergraduate Research Scientist** May 2006 - May 2009
 - Undergraduate researcher in the Enterprise Security Group. Worked in enterprise security management, threat modeling, network intelligence, and information visualization. Peer-reviewed publications in network intelligence.

- **IV Consulting, Inc.**

Side venture between myself and a TU colleague as a custom software contractor, working in database and web services.

Partner/Developer

Co-founder of the company as well as web and database developer in Python's Django framework. Developing two production systems for patient management and subject tracking for a psychiatric hospital and brain research institution. Responsible for back-end web development, project management, client relations, and documentation.

Tulsa, OK

Jul 2010 - Present

- **Vidoop**

Technology start-up company that produced a web-based multi-factor authentication product and advertising platform.

Security Research Intern

Performed a vulnerability assessment on the user-facing portions of the company's authentication product. Developed proof-of-concept code for several attacks, including bypassing the product's CAPTCHA properties using computer vision. Delivered a comprehensive report and developed proof-of-concept mitigation strategies.

Technical Writing Intern

Served as a copy writer and editor for technical documentation, specifications, white papers, user documentation, and marketing materials. Developed, recorded, and narrated a series of educational videos for Vidoop's products as well as OpenID. Primary author on the corporate blog. Worked closely both with developers and business personnel. Staffed the company's exhibit at the IT Security World trade show.

Tulsa, OK

May 2008 - Sep 2008

May 2007 - Mar 2009

Projects

- **GSM Scale**

 - Developing a system for wirelessly collecting, recording, and analyzing patients' weights
 - Working with Alexander Barclay (Laureate Institute for Brain Research), and Kevin Hall (National Institute of Diabetes and Digestive and Kidney Diseases)

Tulsa, OK

June 2010 - Present

- **Cyber-physical Systems**

Institute for Information Security, TU

 - Leading a formal methods research group for networked hybrid systems (i.e. systems with discrete and continuous components)
 - Building a formal framework for modeling and analyzing networked process control systems

Tulsa, OK

Jan 2010 - Present

- **SAND/DVNE**

Enterprise Security Group, TU

 - Led a network monitoring research group

Tulsa, OK

May 2007 - Present

- Led the project's deployment at FAA Computer Security Incident Response Center
- Developing large-screen multi-touch network visualization system
- Presented with Cody Pollet at DEFCON 17 and as a poster at USENIX Security 2009

Academics

Network Security University of Tulsa	Tulsa, OK Spring 2010
Secure System Administration University of Tulsa	Tulsa, OK Spring 2010
Risk Management for Information Systems University of Tulsa	Tulsa, OK Spring 2010
Computational Neuroscience University of Tulsa	Tulsa, OK Fall 2009
Information Systems Assurance University of Tulsa	Tulsa, OK Fall 2009
Machine Learning University of Tulsa	Tulsa, OK Fall 2009
Senior Software Projects University of Tulsa	Tulsa, OK Fall 2008 - Spring 2009
Compiler Construction University of Tulsa	Tulsa, OK Fall 2008
Operating Systems University of Tulsa	Tulsa, OK Spring 2008
Artificial Intelligence University of Tulsa	Tulsa, OK Spring 2008
Numerical Methods for IVP/BVPs University of Tulsa	Tulsa, OK Spring 2008
Computer Animation University of Tulsa	Tulsa, OK Spring 2008
Computer Networks University of Tulsa	Tulsa, OK Fall 2007
Enterprise Security Management University of Tulsa	Tulsa, OK Spring 2007
Computer Security University of Tulsa	Tulsa, OK Spring 2006

Conferences

International Conference for High Performance Computing, Networking, Storage and Analysis 2008 (SC08)	Participant
IT Security World Conference and Expo 2008	Exhibitor
12th TU Student Research Colloquium and 84th AAAS-SWARM Regional Meeting	Speaker, Session Chair
DEFCON 16	Participant (Human)
Computer Security and Information Intelligence Research Workshop (CSI-IRW) 2009	Speaker
The 2009 International Conference on Internet Computing (ICOMP '09) at WORLDCOMP '09	Speaker
DEFCON 17	Speaker
18th USENIX Security Symposium	Poster Presenter
13th TU Student Research Colloquium	General Co-chair, Speaker
Blackhat USA 2010	Participant
DEFCON 18	Participant (Human)
19th USENIX Security Symposium	Workshop Speaker

Awards and Honors

General Co-Chair, TU Student Research Colloquium	2010
Chair, Computer Security Special Topic Symposium, TU Student Research Colloquium	2010
Honorable Mention, Best Presentation, AAAS-SWARM 2009	2009
Runner-Up, Donald W. Reynolds Governor's Cup Business Plan Competition	2007

Publications and Presentations

- The Blunderdome: An Offensive Exercise for Building Network, Systems, and Web Security Awareness*¹**
 P Gehres, N Singleton, G Louthan, and J Hale
 CSET 2010
 at 19th
 USENIX
 Security
 Sympo-
 sium
 July 2010
- Toward Sensitive Information Redaction in a Collaborative, Multilevel Security Environment*¹**
 P Gehres, N Singleton, G Louthan, and J Hale
 WikiSym
 2010
 July 2010
- Towards Formal Analysis of Cyber-Physical Systems***
 G Louthan, N Singleton, M Papa, and J Hale
 TU Collo-
 quium
 March
 2010
- Large-scale Multitouch Interactive Network Visualization (Poster)***
 C Pollet, G Louthan and J Hale
 USENIX
 Security 18
 August
 2009

- *SAND: An Architecture for Signature-based Automatic Network Protocol Detection (Poster)*
G Louthan and J Hale
USENIX Security 18
August 2009
- *Hack Like the Movie Stars: A Big-Screen Multitouch Network Monitor*
G Louthan, C Pollet, and J Hale
DEFCON 17
August 2009
- *Content-based Alternatives to Conventional Network Monitoring*¹
G Louthan, B Deetz, M Walker, and J Hale
CSIIRW '09
April 2009
- *Toward Robust and Extensible Network Protocol Identification*¹
G Louthan, C McMillan, C Johnson, and J Hale
ICOMP '09
July 2009
- *Communication without Boundaries: Breaching the Great Firewall of China*
G Louthan and J Hale
AAAS-SWARM '09
March 2009

Skill set

Programming Languages Java; Python; Clojure; Common Lisp; Basic; some Ruby, Perl and PHP

Technologies TCP/IP; Computer networking; Shorewall/IPTables and general firewalling; Mathematica; L^AT_EX; Network monitoring; Virtualization; some .NET

Processes Risk management for information systems (NIST SP 800-30), including some familiarity with IT aspects of Sarbanes-Oxley risk assessment (PCAOB Auditing Standard 5); Information Security Management (ISO/IEC 17799:2005); Information Assurance Controls and Accreditation (NIST SP 800-53 and DoDI 8510.01); Incident response and computer forensics; General policy development; General familiarity with NIST 800 series

Platforms Linux (especially Debian/Ubuntu); Windows 2000/XP/Vista/7 (Personal and Server versions); VMWare ESXi; OpenWrt/FreeWrt; Mac OS X

Mathematics Numerical analysis; Finite difference methods; Finite element analysis; Real analysis; Discrete mathematics; Modern algebra; Finite state automata; Hybrid automata; Process calculi; Analysis of algorithms

¹Denotes a peer-reviewed publication