George R. Louthan IV

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Education

- **University of Tulsa** — Tulsa, OK
  B.S., Computer Science (expected); B.S. Mathematics (expected) — *May, 2009*
  - CNSS 4011 (Information Security Personnel) Federal Information Assurance Certification
  - CNSS 4012 (Senior System Manager) Federal Information Assurance Certification

Work Experience

- **Vidoop** — Tulsa, OK
  Research and Technical Writing Intern — *May 2007 - Present*
  - Developed technical documentation for an authentication security product
  - Traveled to provide technical expertise at trade shows
  - Performed vulnerability assessments and delivered recommendations for mitigation

Projects

- **SAND** — Tulsa, OK
  Enterprise Security Group, TU — *Summer 2007 - Present*
  - Leading a passive network monitoring research group
  - Led the project's deployment at FAA Computer Security Incident Responce Center
  - Currently working with low-level OS integration and higher-level graphical network visualization

- **Disastro** — Tulsa, OK
  University of Tulsa — *Spring 2009*
  - Technical lead and developer for a workflow management system for disaster response
  - Integrating systems for SMS, voice phone, and web services for aggregation and dissemination of urgent relief information in disaster situations

- **Lunchman** — Tulsa, OK
  University of Tulsa — *Fall 2006 - Spring 2007*
  - Technical team member for a prototype web application for restaurant search and selection
  - Received runner-up award in the Donald W. Reynolds Governor's Cup business plan competition for 2007

- **NOVA** — Tulsa, OK
  Enterprise Security Group, TU — *Spring 2006*
  - Participated in development of a major network analysis project written in Java
  - Assisted deployment at FAA Computer Security Incident Responce Center

Selected Coursework

- **Senior Software Projects** — Tulsa, OK
  University of Tulsa — *Fall 2008 - Spring 2009*
  - Two-course sequence in software engineering, focusing on the Rational Unified Process, including formal and semi-formal methods of specification and design

- First semester included several non-trivial small group software projects including documentation
- Second semester included a semester-long major group project (See Disastro in Projects section above)

- **Compiler Construction** — Tulsa, OK
  University of Tulsa — *Fall 2008*
  - Studied languages, grammars, syntax-directed translation, finite automata, and other fundamentals of language syntax and semantics
  - Built the frontend of a PASCAL compiler

- **Operating Systems** — Tulsa, OK
  University of Tulsa — *Spring 2008*
  - Studied OS principles including process synchronization, threading, scheduling, memory and virtual memory management, and paging
  - Implemented synchronization primitives, user processes, and scheduling in the NACHOS operating system

- **Artificial Intelligence** — Tulsa, OK
  University of Tulsa — *Spring 2008*
  - Introduced to fundamentals of AI, including agents and environments, search techniques, rule-based reasoning, logic, game-playing, and planning
  - Completed numerous projects in Common Lisp and with the CLIPS expert system language

- **Numerical Methods for IVP/BVPs** — Tulsa, OK
  University of Tulsa — *Spring 2008*
  - Studied finite element and finite difference methods for elliptic, parabolic, and hyperbolic partial differential equations
  - Developed numerical solutions to problems using the Mathematica software and language

- **Computer Animation** — Tulsa, OK
  University of Tulsa — *Spring 2008*
  - Introduced to techniques of 3D modeling and animation in a lab setting

- **Computer Networks** — Tulsa, OK
  University of Tulsa — *Fall 2007*
  - Included TCP/IP, the OSI model, encoding, framing, error detection, reliable transmission, and other computer network principles
  - Completed projects including implementing reliable delivery through sliding-window protocol over UDP, and HTTP server

- **Enterprise Security Management** — Tulsa, OK
  University of Tulsa — *Spring 2007*
  - Studied the managerial aspects of computer security; included development and maintenance of policies and procedures, regulatory compliance, risk management, and disaster planning and recovery
  - Participated in tabletop exercises in risk management, development of specific policies and procedures, and gained familiarity with NIST SP 800-63

- **Computer Security** — Tulsa, OK
  University of Tulsa — *Spring 2006*
  - Basic introduction to cryptography, various secure protocols, best practices, network security, and legal and ethical issues in computer security

- Developed several non-trivial secure software systems, including oblivious transfer; key exchange and management and secure file transfer; and PKI with RSA and X.509 certificates
- **Computer Forensics**   Tulsa, OK
  University of Tulsa   *Spring 2006*
    - Topics included incident response and recovery, identification and extraction of electronic evidence, and forensic tools
    - Projects included email tracing, interviewing witnesses, evidence collection, live volatile data collection, network traffic analysis, imaging drives, file restoration, and investigating web attacks

Awards and Honors

Tulsa Undergraduate Research Challenge Participant	2006-08
Runner-Up, Donald W. Reynolds Governor's Cup Business Plan Competition	2007
National Merit Scholar	2005-2009
Oklahoma St. Regents for Higher Education Academic Scholar	2005-2009
University of Tulsa Presidential Scholar	2005-2009
Robert C. Byrd Academic Scholar	2005-2009

Publications and Presentations

- ***Content-based Alternatives to Conventional Network Monitoring***   CSIIRW '09
  G Louthan, B Deetz, M Walker, and J Hale   *April 2009*
- ***Toward Robust and Extensible Network Protocol Identification***   ICOMP '09
  G Louthan, C McMillan, C Johnson, and J Hale   *July 2009*
- **Communication without Boundaries: Breaching the Great Firewall of China**   ICOMP '09
  G Louthan and J Hale   *July 2009*

Skill set

Programming Languages Java, Python, Common Lisp, BASIC, C/C++, Perl, PHP

Technologies and Processes TCP/IP, Computer networking, Shorewall, Mathematica, LaTeX, XML, SQL, CLIPS, Maya, Network monitoring, Incident response and computer forensics, Risk assessment and information security policy

Platforms Linux (Ubuntu), Mac OS X, Windows 2000/XP/Vista (Personal and Server versions), OpenWrt/FreeWrt

Mathematics Numerical analysis, Finite difference methods, Finite element analysis, Real analysis, Discrete mathematics, Modern algebra

Miscellaneous Excellent problem solving skills, Not easily stressed, Strong communication skills including a knack for delivering technical information to non-technical individuals

Languages English (Native), Spanish (Basic)

Interests

Academic Computer security, Network monitoring and analysis, Network protocols, Free software, Distributed social networking

Musical Playing trumpet and harmonica, and composition

Other Reading, Writing, Roomba hacking