

Geoff Mulligan

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PROFESSIONAL SUMMARY

Expert on the Internet of Things, Smart Cities, Internet and computer technologies and organizational innovation. Former White House Presidential Innovation Fellow focused on Cyber-Physical Systems and the IoT. *Lecturer, Developer, Designer : Internet, IoT and Innovation.*

WORK EXPERIENCE

SKYLIGHT DIGITAL, Washington D.C.

Partner / Founder, Jun 2017 – Present

- Business Development
- Innovation Practices Consulting
- Design and Implementation of IoT
- Design, Development and Deployment of Smart and Sustainable Cities
- Embedded Systems Design
- Network Protocols, Security by Design, Privacy by Design

JABIL, GLOBAL

CTO for IIoT, Sep 2018 – Present

- Responsible for Design, Architecture and Development of Industrial IoT solutions for Jabil and Customers
- Development of Predictive Maintenance technology and services
- Design of an Open Standards Based sensor platform for IIoT solutions in Smart Cities, PM, transportation, Factory of the Future, ...
- Responsible for IoT and IIoT trends analysis

LORA ALLIANCE, Global

Chairman, Aug 2015 – Mar 2018

- Founded and grew Alliance from 11 to over 550 member companies. Delivered to industry the 1.0 and 1.1 specifications along with certification program.
- Direct organization's \$2M financial and budget activities to fund operations, maximize investments, or increase efficiency.
- Confer with board members, organization officials, or staff members to discuss issues, coordinate activities, and resolve problems.
- Preside over boards of directors, management committees and technical committees.
- Prepare and present reports concerning activities, expenses, budgets, government statutes or rulings, or other items affecting program services.
- Deliver speeches, write articles, and present information at meetings, conferences and conventions to promote Alliance services, participation and technical specifications.
- Oversee technical specification design and certification.
- Represent organization to promote their objectives at official functions.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, Washington D.C.

US ANSI/ISO Representative, Aug 2014 – Sep 2015

- Served as the US Representative to the International Standards Organization and United Nations Strategic Advisory Group on Smart and Sustainable Cities.

- Delivered a strategic work plan and formation of an international work group on standards and work items for the delivery of Smart and Sustainable Cities.

THE WHITE HOUSE, Washington D.C.

Presidential Innovation Fellow, Jun 2013 – Jul 2014

- Design, develop and deliver the White House Smart America Challenge to demonstrate key IoT benefits and inform on policy issues.
- Work across Federal Executive Branch and White House Organizations to create opportunities for Innovation and organizational development.
- Review and analyze legislation, laws, and public policy, and recommend changes across the Executive Branch.
- Develop computational methods for solving problems related to the Internet of Things, data privacy and security.
- Participate in multidisciplinary projects in areas such as IoT, Smart and Sustainable cities, Cyber-physical Systems.
- Deliver speeches, write articles, or present information at national and international conferences and events.
- Develop and refer major policy matters to White House staff.

MULLIGAN LABS, Colorado Springs CO

President and Founder, Aug 2006 – Jun 2013

- Consult on IoT system and protocol designs.
- Consult and help Federal Government, corporations and small businesses develop open standards, and IoT system.
- Deliver speeches, write articles, and present information at meetings, conferences and conventions to promote services, exchange ideas.
- Make presentations to legislative or other government committees regarding policies, programs, or budgets.
- Manage organization's financial activities for operations and to maximize investments and increase efficiency.

IPSO ALLIANCE, Global

Chairman, Sep 2008 – Dec 2017

- Found and grew Alliance from 9 companies to over 60 member companies.
- Confer with board members, organization officials, or staff members to discuss issues, coordinate activities, and resolve problems.
- Prepare budgets for approval, including those for funding or implementation of programs.
- Preside over and serve on Boards of Directors, management committees and Technical Advisory Board.
- Deliver speeches, write articles, and present information at meetings, conventions and conferences to promote Alliance membership, services and programs.
- Interpret and explain policies, rules, regulations, or laws to organizations, government or corporate officials, or individuals.
- Make presentations to legislative or other government committees regarding policies, programs, or budgets.
- Represent organization to promote their objectives at official functions.

INVENSYS BUILDING SYSTEMS, Rockford IL, Richmond VA, Slough UK

Director of Engineering, Nov 2004 – Aug 2006

- Managed \$15M development budget and lead 50 electronic and mechanical engineers across 3 international work sites delivering managed electronic and mechanical engineering for the Building Automation.
- Delivered communications architecture and product, development and new business path finding program

- Brought to market new BACnet controller products, launched 4 new product lines and developed new ball valve technologies.

INVENSYS CONTROLS DIVISION, Carol Stream IL

Communications Technology Architect, Jun 2004 – Nov 2004

- Created and managed corporate R&D program with a \$5 million budget.
- Initiated design and delivery of RF/Communications and future technology vision for Invensys Building Systems and Invensys Controls.
- Led research on home device connectivity for management and monitoring of in-home equipment.
- Managed new business development opportunities, industry alliances, technology design and development.
- Served on Zigbee BoD and participated on various Zigbee technical working groups.
- Chaired the 6LoWPAN working group of the IETF.
- Served on and chaired various committees on ISA100. Wrote the IP over IEEE 1451.5 standard.

INVENSYS HOME CONTROLS, Richmond VA

Chief Scientist, Mar 2001 – Jun 2004

- Responsible for security, privacy, protocol design and overall network architecture for the Invensys home control and energy management system.
- Launched first multi-state Smart Grid pilot systems.
- Designed and implemented prototype networking technologies for use within the home.
- Designed and implemented communications systems from the home to service providers utilizing various Broadband technologies including Cable, DSL, WiFi and BPL. Web and Internet protocol design for secure, private and efficient data communications for home and commercial environments.
- Founded the Zigbee Alliance and served on initial Zigbee BoD.

INTEROSA, Colorado Springs CO

CEO, CTO, Founder, Jul 1999 – Feb 2001

- Managed and directed Internet startup focused on software/technology providing Email Policy/Privacy using state of the art cryptographic architecture.
- Brought company from conception through inception and growth to 30 employees, product delivery, first customer shipment and \$25M valuation.
- Directed organization's financial and budget activities to fund operations, maximize investments and growth.
- Analyzed operations to evaluate performance of company and staff in meeting objectives and to determine areas of potential cost reduction, and program improvement.
- Directed and coordinated activities of businesses or departments concerned with production, pricing, sales, or distribution of products.

GEOCAST NETWORK SYSTEMS, Palo Alto CA

Founder and Protocol Architect, Apr 1998 – Aug 1999

- System programming engineer and architect, networking/multicast tools design, development and support.
- Responsible for overall security design and implementation, OS design and architecture and redundancy.
- Creation of satellite based multicast overlay internet with advanced viterbi data encoding to provide increased spectral efficiency.
- Develop initial business plan and secure funding from Kleiner Perking, Mayfield and IVP at \$5M pre-investment valuation.

USA.NET, Colorado Springs CO

CTO / VP Engineering, Feb 1996 – Nov 1996

- During a sabbatical from SUN, joined the management team to help start USA.NET.
- Managed the design, development and rollout of NetAddress, a permanent email address product, which grew to over 100K subscribers.

- Responsible for operations of a four state IP network supporting over 6000 dialup and dedicated customers. Launched a nationwide access program with enhanced network functionality and speed.

SUN MICROSYSTEMS, Palo Alto CA

Senior Staff Engineer, Feb 1993 – Apr 1998

- Technologist and evangelist for the security and E-Commerce products principal architect for security strategy. Architect of SunScreen, SUN's high security hardware/ software firewall product.
- Founder and lead kernel programmer of Sun's Internet Commerce Group which focused on building new tools and services for Internet business.
- Developed Address Translation and Topology hiding support for the Sunscreen products.
- Provided fundamental support to marketing and business development by presenting lectures on computer security, protocol design and implementation and networking futures at numerous conferences and customers sites.
- TCP/IP kernel and utility support and development on SunOS 4.x and Solaris 2.x platforms.
- Developed network security tools, including packet snoopers, filters, screens and Internet Firewalls on SUN and PC hardware.
- Technical lead on initial Solaris SPX/IPX Netware integration and development.
- Design and maintenance of SUN's Wide Area Network (SWAN), including the Internet gateway design and security management.
- Researched secure and disconnected Email technology and built mail enabled applications.
- Ported network software from BSD to Solaris and developed software to research future Internet protocols and services, including network code to support IPv6 and IP Multicasting.

DIGITAL EQUIPMENT CORPORATION, Palo Alto CA

Principal Software Engineer, Apr 1990 – Jan 1993

- Designed and built enhanced security Internet gateway product (DEC SEAL). Researched firewall configuration management and Internet business opportunities.
- Built Email driven applications for document and file retrieval.
- Researched issues related to portable computing, such as address assignment and new mail paradigms.
- Built DEC's corporate wide IP network including IP tunneling over DECNET.
- As Director of Education for NSL, developed a curriculum and directed delivery of courses on the design, technology and fundamentals of TCP/IP. Consulted to various Digital groups on networking topology, software and protocol design.
- Member of the Bay Area Gigabit network design team.

US AIR FORCE, Pentagon and USAFA CO

Air Force Officer, May 1979 – Apr 1990

- Developed strategic plans for Academy LAN and Data Communication requirements. Built predictive failure analysis tools for use with LAN components.
- Designed and installed wide area network connections for AF supercomputer network.
- Consulted throughout AF on LAN/WAN selection, design and security alternatives, UNIX/System software design, programming methodologies and tools and systems analysis.
- Directed the design and installation of the Academy's \$6M LAN, servers, and connections to DDN and USENET. Managed maintenance and operation of system and application software on eleven different UNIX systems. Provided support for over 4000 PCs, including micro mainframe connections and software selection.
- Taught courses for the Academy's Computer Science Department including "Structured Programming using Pascal" and "Scientific Programming in FORTRAN" and "C programming" and the "UNIX operating system".
- Designed and directed installation and management of Pentagon computer networks using Ethernet and cable technologies, which supported over 10,000 nodes.
- Advised Office of the Secretary of Defense (OSD), Secretary of the Air Force (SAF) and Joint Chiefs of Staff (JCS) on LAN and WAN and computer system design and selection. Lectured throughout the Air Force on network hardware and software design and selection and installation.

- Worked on the design of the Defense Data Network and ARPAnet, secure network interfaces. System and data base manager and systems programmer supporting OSD, State Department, intelligence agencies and the White House. Brought first Pentagon system online to the ARPAnet.

OTHER PROFESSIONAL ACTIVITIES

PATENTS

- 17 patents covering: computer security, encryptions, internet protocols, electronic mail, RF communications

IPV6 DESIGN TEAM – 1992-1995

- Helped with design and implementation of next generation of IP
- Built first prototype IPv6 PC implementation
- Developed first packet decoder for IPv6

CREATED 6LOWPAN – 2001-2007

- Built first embedded IPv6 prototype

TESTIFIED BEFORE CONGRESS ON COMPUTER AND NETWORK SECURITY - 1997

- Provided testimony to House Science committee on computer and networking security threats and assessments

AUTHOR – “REMOVING THE SPAM” - 1999

- Authored book on dealing with Spam and email processing
- Published by Addison Wesley
- Selected as best security book of 1999

EXPERT WITNESS – AMAZON V. BARNES AND NOBLE – 1999-2000

- Provided expert witness testimony regarding design, validity and prior art of Amazon ‘411 1-click business process patent

INDUSTRY/CONFERENCE SPEAKER – 1995-Present

- Presented keynote, session and panel presentations at over 100 conferences world-wide
- Topics include: Protocol Design; Network and Computer system security; Data Privacy; Open Systems and Interoperability; IPv6; 6Lowpan; Internet of Things; Cyber-physical systems; Smart City Technology and Deployment; Wireless Networking Technology.

EDUCATION

***University of Denver, Denver Colorado
Masters Computer Science***

***Unites States Air Force Academy, USAFA Colorado
Bachelor of Computer Science***