

# ROBERT H'obbes' ZAKON

Robert@Zakon.org

*Citizenship:* United States  
*Clearance:* TS/SCI+ (lapsed)

*Languages:* Portuguese (native speaker),  
Spanish (conversational)

## SELECTED ACCOMPLISHMENTS

- Served as White House Presidential Innovation Fellow bringing the principles, values, and practices of the innovation economy into the federal government.
- Developed and commercialized the *OpenConf* peer-review and abstract management system used for thousands of events in over 100 countries by organizations such as Adobe, IEEE, HP Enterprise, ACM, ASCE, and Stanford.
- Provided technical guidance on: U.S. Federal Drug Administration's \$2B ICT21 data center procurement; U.S. Health and Human Services Center for Medicare and Medicaid Services' (HHS CMS) electronic health records security architecture; and HHS CMS' 100M+ enterprise identity management requirements.
- Led the deployment of a multi-national network for the sharing of open source intelligence among the US and its allies. Brought in to jumpstart this stalled program, with responsibility for both the design and implementation of the network and information infrastructures, and to lead technical discussions with foreign government officials.
- Set the vision and led the development and operations of a consumer software portal and cloud-based application provider, while at the same time building up a new organization, raising venture capital, managing technology and information staff, evaluating and overseeing service providers, and ensuring coordination and collaboration across all corporate sectors.
- As a Technical Ambassador, spent one year at U.S. Department of Defense (DoD) MITRE sites around the world educating engineers and managers on emerging technologies, facilitating collaboration with their corporate counterparts, and developing capabilities to improve DoD processes.
- Integrated the first machine language translation system with the Web, pre-dating similar Internet capabilities by more than three years. Originally developed as a prototype for a United Nations congress on criminal justice, it was then deployed for use by US servicemen and intelligence personnel worldwide.
- Conceptualized and prototyped one of the first corporate intranets, MITRE's Information Infrastructure.
- Designed and deployed the highest wireless (Wi-Fi) network in the northeastern US across 8Km of backcountry in support of a mountaintop, solar-powered research weather station and webcam.
- Designed, developed, and managed dozens of web-based intranets, extranets, and public sites, including some receiving millions of daily hits. Web applications developed span e-commerce, mapping, data management, etc.
- Volunteered as a business mentor with SCORE for over fifteen years.
- Founded a public school STEM club and coached an award-winning robotics team for over five years.

## EDUCATION

Case Western Reserve University (CWRU), Cleveland, OH

- M.S. Computer Engineering & Science, 1992
- B.S. Computer Engineering major with Psychology and Philosophy concentrations, 1991

The Peddie School, Hightstown, NJ

Colégio Andrews, Rio de Janeiro, Brazil

## WORK EXPERIENCE

### **Zakon Group LLC, North Conway, NH**

#### **Co-Founder and Chief Technology Officer. 2001 to Present**

Zakon Group LLC is a technology developer and management consultancy; roles and projects have included:

- Developer and administrator, *OpenConf* peer-review and abstract management system, used worldwide by organizations such as IEEE, Adobe, ACM, Princeton University, W3C, Sandia National Labs, AMD, and GM.
- Technical Lead, Center for Medicare and Medicaid Services' (CMS) Continuity Assessment Record & Evaluation (CARE) As-Is assessment and To-Be security systems engineering plan for the national exchange of electronic health records (EHR).
- Technical Advisor, Food and Drug Administration's (FDA) ICT21 \$2billion data center procurement.
- Technical Advisor, Center for Medicare and Medicaid Services' Enterprise Identity Management (EIDM) and Enterprise Shared Services (ESS), implementing a solution for 100+ million users.
- Technical Lead, Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU) Assessment for the Center for Medicare and Medicaid Services.
- Developer of a phenology mapping application and volunteer management system for the Appalachian Mountain Club
- Designer, developer, and manager of intranet, extranet, and public web sites, e-commerce applications, content management systems, and collaborative tools, for scientific and other organizations including over ten years each with the Mount Washington Observatory and Clean Air Task Force.
- Systems integrator of the highest northeast US Wi-Fi link, in support of backcountry scientific operations.

### **White House, Washington, DC**

#### **Presidential Innovation Fellow, May 2016 to April 2017**

The Presidential Innovation Fellows program brings the principles, values, and practices of the innovation economy into government by pairing talented, diverse technologists and innovators with top civil-servants and change-makers working at the highest levels of the federal government to tackle some of the United States' biggest challenges. Select activities included:

- Innovator-in-Residence, U.S. Department of the Treasury (FinTech, blockchain, distributed ledgers, identity, cybersecurity, smart contracts, critical infrastructure, cyber governance)
- Product Strategy and Visioning Trainer, Digital Acquisition Accelerator Pilot (agile, procurement)
- Mentor, #HackThePayGap
- Lecturer, National Defense University (cybersecurity, artificial intelligence, machine learning, big data)
- Advisor, initiatives on open data, open access, and cross-agency innovation

### **SoftZoo.com, Reston, VA**

#### **Senior Vice President and Chief Technology Officer. July 1999 to July 2001**

SoftZoo.com was an early cloud computing application provider and software portal.

- Set the vision for SoftZoo's service, expanding the original company goals.
- Led all aspects of agile development and operations; always coming under budget and ahead of schedule.
- Hired and oversaw technology and information managers and staff.
- Raised over \$1M from angels and VCs as part of senior leadership fundraising team.

### **The MITRE Corporation, McLean, VA**

#### **Principal Engineer & Internet Evangelist. June 1992 to September 1999**

MITRE is a not-for-profit organization devoted to research, development, engineering, and scientific activities in the public interest. MITRE operates several federally-funded research and development centers.

##### **Information Systems Security Group: (Principal Engineer, 1997-9)**

- Designed a guard capability to enable the automatic transfer of Web data between networks of different classifications.
- Representative to the Intelligence Community XML Study Group and Technical Working Team.
- Performed analysis of foreign Internet infrastructures and national wide-area Internet vulnerabilities.
- Led several teams investigating key storage issues in Windows NT/IE, secure PDF products, and the use of biometric and smart card devices with public-key infrastructures.

- Researched and prototyped a web-based, security label document management system that provided a means of binding metadata with documents, and was the first proxy-level digital signature verification mechanism.
- Provided policy guidance to the US intelligence community on the use of mobile code.
- Researched and prototyped a PKI-based reference implementation for code signing, and evaluated several mobile code security products.

**Technical Ambassador:** (1996-7)

Spent one year at DoD MITRE sites around the world prototyping new capabilities to enhance DoD processes, and educating engineers and managers on emerging technologies. Locations: South Korea (USFK), Hong Kong, Hawaii (PACOM/USCINCPAC), Japan (USFJ), Germany (EUCOM).

**Commands, Technology & Intelligence Integration Group:** (Lead Scientist & Internet Evangelist, 1994-6)

- Led the deployment of a multi-national network for the sharing of open sources among the intelligence components of US allies. Brought in to jumpstart this stalled program with responsibility for both the design and implementation of the network and information infrastructures, and to lead technical discussions with government officials from seven countries. *Program Award.*
- Developed an information infrastructure (Intelink-J) for the US Forces Japan (USFJ-J2) bilateral network. This included a complete intranet design/development, as well as providing various bilingual (English/Japanese) capabilities such as the integration of language translators and dictionaries with the Web. Also supported KeenEdge'98 with development of a web-based RFI tracking system. *Program Award.*
- Led design and development of the MITRE Information Infrastructure (MII), one of the first corporate intranets. The MII integrated MITRE's distributed information spaces with the purpose of enhancing information sharing and access across the corporation, including publishing, profiling, browsing, and searching of document, project, and financial data. *Director's Distinguished Accomplishment Award.*
- Led design of the FLCommunity Intranet, a 3-tier virtual Foreign Language Community network built on Intelink, OSIS, and Internet, providing language learning, processing, and management services/resources.
- Led the integration of Systran's machine translation system with the Web and e-mail, including support for nine languages with glossaries and multiple encoding formats. *Director's Distinguished Accomplishment Award.*
- Technical consultant for UNOJUST, a prototype for sharing information across 13 UN Criminal Justice institutes from around the world using the Internet. Integrated Globalink machine translation system with the Web, and developed a cross-format search engine. Prototype shown at 9th UN Criminal Justice Congress.
- Developed an open source intelligence coverage and capabilities database for the US Intelligence community. *Program Achievement Award.*
- Systems design consultant during the early phases of Intelink.
- Evangelized and implemented networked information navigation, discovery, search, and retrieval servers within MITRE and for sponsors.
- Formed the Online@MITRE working group to coordinate and lead different corporate efforts in the area of information retrieval. This group was the genesis for the MII, MITRE's intranet.
- Developed a collaborative environment for the production of technical documents.
- Researched streaming and multicasting technologies for MITRE-wide and sponsor deployment of live and on-demand audio/video.
- Developed web-based training (WBT/CBT) for Intelink authors.
- Coordinated technical exchange meetings with academia and industry (e.g., Netscape, Microsoft, Oracle).

**Distributed C4I Systems Group:** (Member of Technical Staff, 1992-4)

- Developed software providing a fused view of the battlefield (C4I FTW) through integration of C2 systems.
- User interface consultant for the evaluation and redesign of NASA Spacelink. *Special Recognition Award.*
- Designed and developed user interfaces for two large-scale projects: ISLES - Information Systems for Law Enforcement Support, and DEA/IAW - Intelligent Analyst Workstation.
- Designed and developed an inexpensive, cross-platform collaborative editing & information retrieval system.
- Tested and integrated 40+ COTS and GOTS applications including imagery, GIS, and OA into a coherent system, then migrated several of these to a Compartmented Modal Workstation (CMW).
- Researched computer-supported collaborative work technologies.

## **CWRU Weatherhead School of Management (WSOM). December 1990 to May 1992**

### **Director - Distributed Decision Making Research Lab, Systems Consultant - Computer Support Group**

- Project coordinator and chief research programmer of a distributed decision making, cognitive map application supporting collaborative work.
- Developed a technology training program, and taught faculty and students.
- Developed the WSOM Executive Information System - a knowledge base system with an intuitive, visual front-end providing information on the school's personnel, room control, key control, and equipment.

## **Independent Consultant, Cleveland, Ohio. January 1988 to December 1990**

- **V.A. Hospital, Vascular Surgery department** – Implemented a Vascular Journal References database, and developed a patient database and vascular diagnosis expert system.
- **Apple Computer, Inc.** – Promoted the Apple Macintosh computer line at CWRU by hosting special events/seminars, meeting with students, faculty, and administrators, and providing technical support
- **NCR Corp. Human Interface Group** – Researched user interface technologies at the Microelectronics and Computer Consortium (Austin, TX), and ported the Proteus-Orion Graphical Objects (POGO) system.
- **Scheele Fine Arts** – Computerized art gallery's inventory, and implemented an accounting system.
- **TechPool Studios** – Developed an Adobe EPS interpreter for QuickDraw and an image converter.
- **CWRU, WSOM, MIDS department** – Researched and developed a forecasting expert system.

## **Case Western Reserve University. September 1986 to December 1990**

- **Manager** - Graduate Computer Lab.
- **Assistant Manager** - Undergraduate Computing Labs.
- **Programming Instructor** - taught undergraduate and graduate students.

## **SELECTED PROFESSIONAL ACTIVITIES**

- Board of Advisors Member, First Run Angels Group
- Counselor, SCORE
- Chairman, Organizing and Steering Committee Member, ACSAC (Security Conference)
- Chairman, SIGNIDR V (Networked Information Discovery & Retrieval Conference)
- Co-Chairman, User Interface Symposium
- Coordinator, Foreign Language Technology Symposium
- Review Committee Member, IWIPS (Internationalization of Products and Systems)

## **SELECTED PAPERS, PRESENTATIONS, AND TEACHING ACTIVITIES**

- *Hobbes' Internet Timeline*, a comprehensive chronology of events that shaped the Internet and its growth, published and cited in thousands of magazines, books, web sites, etc, and as IETF RFC2235/FYI32. 1993-2018
- *CyberSecurity Future: AI, Big Data, and the Promise of a More Secure Tomorrow*, National Defense University, 2016
- *Imagining the Future: Technology Innovation in the Internet Age*, Keynote - Euro American Conference on Telematics and Information Systems (EATIS), 2012
- *Keeping Your Web Apps Secure*, ACSAC 2010-12, ACM CCS 2010, PST 2011
- *Enterprise Shared Services Concept of Operations (CONOPs) and Business, Data, and IT Plan*, co-author, 2012
- *Enterprise Shared Services Functional Architecture*, co-author, 2012
- *Statement of Objectives for Enterprise Identity Management (EIDM) Services*, co-author, 2011
- *Cloud Computing: Beyond the Hype*, 2010
- *Overview of Continuity of Assessment Record and Evaluation (CARE) Security, Privacy, and Processes*, co-author, 2009
- *CARE Health Information Exchange (C-HIIEP) Security Systems Engineering Plan*, co-author, 2009
- *WebAppSec*, ACSAC 2008-9, ACM CCS 2009, AppSec DC 2009/10/12, OWASP AppSec USA 2011, ISS 2011
- *Conceptual View of the Reporting Hospital Quality Data for Ann. Payment Update (RHQDAPU) Program*, co-author, 2007
- *Independent Assessment of the RHQDAPU Program: Findings and Recommendations*, co-author, 2007
- *Securing Online Banking Transactions*, 2002
- *A Taxonomy for Off-the-Shelf Consumer Software*, 2000
- *Internet-wide Vulnerability Assessments*, 1999
- *Security Assessment of commercial biometric and smart card products*, 1999

- *Enabling Access to Subsets of Networked Resources in Partially Trusted Networks*, Intelink 2000, 1998
- *OSIS International: A Technical Case Study*, NATO Conference, 1998
- *Executable Content: Mobile Code in the Age of the Web*, 1998
- *A Code Signing Reference Implementation ConOps and Configuration Guide*, 1998
- *CAPCO Labeling Demonstration Concept of Operations and Test Report*, 1998
- *Multilingual Computing and Information Retrieval*, NATO Battlefield Information Collection and Exploitation Systems (BICES) Information Systems Management Conference, 1997
- *Web in the Enterprise*, International World-Wide Web Conference Darmstadt, 1995
- *The Net Culture*, The Telecommunications Review, 1994
- *Internet Information Playground*, Eastern Communications Forum, 1994
- *Integrated View of the Battlespace and C4I for the Warrior* demonstrations, 1993
- *Internet & National Information Infrastructure*, Keynote - National Contract Managers Association Meeting, 1994
- *ADNET Open Systems Application (OSA) Integration Guidance*, 1993
- *C4I for the Warrior* demonstration, 1993
- *Distributed Information Query & Navigation*, 1993
- *ISLES: Information System for Law Enforcement Support*, 1992
- *The Design and Implementation of a Distributed Decision Making Tool*, 1992
- *Graphical Simulation of Ion Flow Through a Neuron's Membrane* (Computational Neuroscience), 1992
- *Object-Oriented Programming Systems (OOPS) & Event-Driven Simulations*, 1990
- *Natural Language Understanding & Knowledge Representation*, 1988

## SELECTED AWARDS, HONORS AND TESTIMONIALS

Elected **Senior Fellow, Applied Computer Security Associates (ACSA)**, 2014

Elected **Senior Member, IEEE**, 2001

**Testimonial**, Lead Government Contractor:

*"You are a professional with tremendous skills, you are an asset to every team you work with, and we value your help at all times."*

**Recognition Award**, OSIS International – secure multinational network and information infrastructure:

*"Your efforts have resulted in a solution that allows International ... access securely using low-cost commercial technologies in an innovative manner"*

**Recognition Award**, BCS – first bilingual (English/Japanese) Intelink extranet:

*"Your contributions ... are indicative of the type of behavior that adds value and reflects well on MITRE"*

**Testimonial**, Non-Profit Executive Director:

*"And I personally thank Robert for his patience, expertise and ingenuity for making this very, very complicated upgrade to our site happen. I can't even imagine where we would be without Robert!"*

**Director's Distinguished Accomplishment Award**, WebMT – first web integration of machine translation:

*"Despite an extremely aggressive schedule, and a limited budget, the [team] rapidly defined, designed, and deployed." ... "Working with initially vague requirements, the indefatigable [team] worked long hours to ensure an excellent product which received customer praise"*

**Director's Distinguished Accomplishment Award**, MITRE Information Infrastructure (intranet)

**Program Achievement Award**, Intelligence Community Open Source Coverage & Capabilities Database

**Special Recognition Award**, NASA Spacelink Interface Study:

*"Your contributions were outstanding and performed under difficult conditions, including short turnaround time and limited funds. Your participation was critical to the success"*

**Testimonial**, OpenConf Client:

*"Thanks a million, Robert. You are one in a million."*