WILLIAM A. BABSON

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SYSTEMS ENGINEERING with **over 25 years hands-on** design and implementation experience in research and manufacturing environments. Focus on Instrumentation and Control of Network Infrastructure and Distributed Systems. Enjoys working with stakeholders, finding novel solutions, system/software design, hardware, hard-core coding (UNIX-based or embedded), mastering new mechanisms and languages, mentoring, going into the field to find the issues, and making things work. Native-born US citizen.

EXPERIENCE:

IMAKE Software and Services, Inc.: 2008 – 2009
Technical Business Development (Senior Member of Technical Staff reporting to the President)

- IPTV Asset/Resource Management Product (OpenVision) initiative
- Targeted Ad Insertion Product (ADeXchange) initiative
- "Technical" Partnership Business Development and Liaison
- Sat on SCTE Digital Program Insertion (DPI) standards working group
- Lead CableLabs Advanced Ad Insertion Interoperability efforts
- Technical input the RFP responses
- Technology resource to developers/architect.
- White Papers, Press releases
- Trade Shows
- "Technical" Market Assessment

Mid-Atlantic Crossroads (University of Maryland): 2005 – 2008
Faculty Researcher (Systems Software Developer/Project Manager)

- Engineer responsible for implementation of the ATDnet (Advanced Technology Demonstration network) contract. Network is a regional high performance fiber optic infrastructure supporting DoD laboratories and agencies administered through the Naval Research Laboratory. Managed upgrade of 100Km OOO (no regeneration) DWDM link supporting 10/40GB channels.
- Extend (Design/Implement) DRAGON (Dynamic Resource Allocation over GMPLS Optical Networks) federated control plane (see http://dragon.maxgigapop.net) to create an instrumented test-bed using real-world fiber optic links to support use of real-time link impairment measurements (specifically Polarization Mode Dispersion (PMD)) in GMPLS-based path computation.
- Provide network-engineering services for multi-gigabit speed (gigapop) regional area network (RON).

Patton Electronics Company (Gaithersburg, MD): 2002 – 2004
Chief Engineer, Sr. Member of Technical Staff, Product Manager

Lead engineer/Product manager responsible for spearheading new product lines, researching, presenting to executive management, prototyping, negotiating with vendors, building and staffing internal teams for implementation as required. Work with VP of Product Management and VP of Engineering to develop strategic direction. Work with customers to refine and deploy product.

- Defined and lead implementation of model 6200 Network Element Manager (HP Openview/Solaris – manage up to 20,000 circuits)
- Deployed 6200 network management system in Morocco. Worked with Maroc Telcom senior management to resolve testing issues, performed on-site code fixes. **Successful system acceptance/payment.**
- Defined and lead implementation of Application Specific Resource Cards: 6323 VOIP call controller, 6392 content accelerator partnering with Boostworks, Propel.
- Monarch ISP: Key role in on-time completion of $3 million custom Nigerian Internet Service Provider (ISP) project (when major contractor dropped out at the last minute.) Erogo provisioning software controlling open-source subsystems (DNS, EMAIL, AAA: RADIUS, Horde) on SUSE Linux OS base.
- Defined and lead implementation of 6100 (low-end) Network Element Manager (Java)
- Defined 6300 next-generation Network Element Manager (Adventnet WebNMS)
- Integrated Smartview (VOIP gateway) management into Foresight EMS
- Defined Foresight Management Interface Specification (FMIS)

Network Associates Advanced Security Research Division (Tislabs) (Glenwood, MD): 1998 – 2001
Computer Scientist

- Vulnerability Aware IDIP: Added vulnerability scanning capabilities to Intruder Detection and Isolation Protocol (IDIP) framework (multi-level policy driven cooperative attack trace-back and mitigation). Architected ability to generate and use vulnerability scan results to decrease false positive security events thereby reducing impact of the IDIP operational communications on the network.
- Participated in the IETF IDWG (Intrusion Detection Exchange Format) working group
- Multi-community Cyber Defense: Research mechanisms to sanitize and share intrusion information among administrative domains with different trust relationships. IDIP used as prototyping framework. CIDF for formatting.
- Implementer of IETF initial SNMP v3 working group reference software in collaboration with UC Davis (Net-SNMP). Responsible for cryptography and key management, development and testing in C and for phase 2 in C++. Linux, FreeBSD, Solaris target platforms. See**:** http://net-snmp.sourceforge.net
- Secure Active Networks Prototype (SANP): Extended the MIT-ANTS active network execution environment adding strongly bound principal-based security policy enforcement. Required modification of Java security environment, use of JCE. Secure DNS used as PKI.

- Active Nets Intrusion Detection and Response (AN-IDR): Implemented agent-based dynamic intrusion detection and response (IDR) system (intrusion prevention). This can be thought of as a network "immune system" where nodes learn how to combat an infection. Designed and implemented test-bed. Defined and implemented prototype that used the Linux kernel-based Netfilter packet "firewall" filter mechanism to allow an active network (AN) in the control plane to police and perform trace back of non-active IP traffic in the data (forwarding) plane. Streaming video was used as the test traffic. For demonstration selected, made functional, and instrumented Stacheldraht distributed denial of service (DDoS) tool.

The MITRE Corp. (McLean, VA): 1997-1998
Senior INFOSEC Engineer

- Designed and Implemented CORBAsec thin client testbed to examine security and other CORBA multi-vendor (Visigenic, Orbix) interoperability. TIS IIOP gateway included in test-bed. Beta tested Visigenic SSL implementation. Netscape CORBA ORB as front-end client, communicating among several ORBS from different vendors and ANO to communicate with back-end Oracle database.
- Independently deployed SAIC developed Netscape-based (DISA Chambersburg) DoD certificate authority at MITRE lab, performed assessment, recommended improvements.
- Co-implemented LDAP-based Role-based access control mechanism where roles were determined by looking up X.509 certificate common-name information in an LDAP database, as an alternative to using attribute certificates.
- Evaluated NT5 (Windows 2000) beta security mechanisms, in particular Active directory.
- Evaluate Java Security and distributed object mechanisms, in particular RMI.

Printer Systems Inc. GENICOM (Gaithersburg, MD): 1992-1994,1995-1997
Software Engineer - Real-time embedded network programming, Manager of Network Software Development

- Implemented TCP/IP stack for in-house real-time embedded message passing OS.
- Designed and implemented i960-based"Unix" LPD host in a serial card form factor.
- Designed and implemented Raster Graphics and Font Management modules for RISC-based (MIPS) high performance laser printers.
- Reverse engineer IDPS (IBM mainframe printing protocol) IP encapsulation and implement in network controller for high-speed laser printing engine. MIPS based real-time custom kernel network application on custom hardware.
- Set up ISP connection and designed firewall around Solaris and early Linux and TIS firewall toolkit, early NAT.
- Researched and recommended CM architectures and products for geographically distributed development teams.
- Network expertise provided for design teams and marketing department.

Netrix, Inc. (Herndon, VA): 1994-1995
Senior Software Engineer

- Developed signaling/management software for frame relay, packet and circuit switches in a proprietary "peer-object" oriented language (MEL) on Apollo and then Sun workstations.
- Evaluated CISCO router card for integration in access switch.

Penril Datability Networks (Gaithersburg, MD): 1987-1992,1994
Senior Principal Software Engineer

- Member of development team adding multi-protocol routing to Clearpoint RISC-based (AMD29K) IP routers (OSPF/NLSP).
- Worked with UNH interoperability testing lab (on-site) to debug OSPF implementation. Real-time embedded C/Assembler/ICE - AMD29K and QUICC (68360).
- VCX Statistical Multiplexer (terminal switch) development, design of VXWORKS-based Telnet LAN interface card. Designed and implemented VCX-based custom packet generator for testing LAN bridges and routers. Multi-processor custom micro-kernel based environment.
- Developed code for IP router based on FDDI bridge hardware platform. SNMP managed via PPP link. OSPF and RIP routing protocols.
- Worked with key OSPF creators and participated in IETF during OSPF development and dominance over ISIS.

Multicomm, Inc. (Arlington, VA) 1985-1986
Software Developer

- Designed and Implemented multi-threading kernel executive and application to allow DOS based PC's to intercept undeliverable packets (via the normal FM sub-carrier transport) and deliver via POTS/modem. Each PC supported 20 modems.
- Wrote a TSR (interrupt-driven background program) to allow DOS-based PC's to transparently (to the user) receive and process data from a wireless data stream.

Eastern Electronics/National Patent Corporation (E. Hartford, CT) 1984-1985
Software Developer

Naval Underwater Systems Center (NUSC-NL) (New London, CT) 1983-1984
Mathematician/Computer Scientist

EDUCATION:

B. Sc. Mathematics, University of Connecticut at Storrs granted 1983.
Many Computer and Electrical Engineering courses.

PROFESSIONAL SOCIETIES:

Association for Computing Machinery **(**ACM); IEEE; IETF; Society for Cable Television Engineers (SCTE); CableLabs. American Radio Relay League (ARRL) (WA1IVD: licensed since 1969.