STEPHEN D. CROCKER

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SUMMARY

Over 50 years of experience in the industrial, academic and government environments involving a wide range of computing and network technologies with specialization in networking and security. Strong background in formal methods, including PhD thesis creating a new logic for reasoning about the correct operation of machine language programs and the development of a program verification system to demonstrate the method.

Managed numerous innovative research and development efforts benefiting private industry and government interests.

Extensive involvement in the development of the Internet, including development of the initial suite of protocols for the Arpanet, the creation of the RFC series of documents, and multiple involvements in the IETF, ISOC and ICANN organizations.

PROFESSIONAL EXPERIENCE

BBQ Group   **2018-present**
Founder, leader

Development of framework and model for expressing possible, desired and existing registration data directory services policies governing collection, labeling and responses to authorized requests.

Shinkuro, Inc., Bethesda, MD   **2002-present**
Co-founder, Chief Executive Officer

Development of information-sharing, collaboration and related tools for peer-to-peer cooperative work and inter-platform information management. Coordination of deployment of the DNS security protocol, DNSSEC, throughout the Internet.

Longitude Systems, Inc., Chantilly, VA   **1999-2001**
Co-founder, Chief Executive Officer

Development and sale of infrastructure tools for ISPs. Overall direction and management of the company including P&L responsibility, funding, marketing, and technical direction.

Executive DSL, LLC, Bethesda, MD   **1999-2001**
Founder, Chief Executive Officer

Creation and operation of DSL-based ISP using Covad and Bell Atlantic DSL circuits.

Steve Crocker Associates, LLC, Bethesda, MD 1998-present
Founder, Chief Executive Officer

Consulting and software development in the e-commerce and network infrastructure areas.

CyberCash Inc., Reston, VA 1994-1998
Co-founder. Senior Vice President for Development and Chief Technology Officer

- Responsible for integration of technical and business vision with the architecture and design processes of the company.
- Design of fundamental credit card and micropayment protocols including embedded foreign exchange for multi-currency transaction.
- Chief security spokesperson.

Trusted Information Systems, Inc., Glenwood, MD 1986-1994
Vice President

- Led research and development in network security, trusted distributed file systems, and integration of cryptography and trusted systems, and program verification.
- Managed the development effort of a reference version of Privacy Enhanced Mail for Internet, code level verification of portions of the operational code in the Defense Data Network routers, and, with UCLA, development of Truffles, a trusted version of the Ficus distributed file system.

The Aerospace Corporation, El Segundo, CA 1981-1986
Director, Computer Science Laboratory

- Founded and directed Aerospace's computer science research laboratory.
- Organized and directed Aerospace's computer science research program.
- Research included program verification, program performance analysis, expert systems for satellite control, techniques for knowledge acquisition, highly reliable memories design, VLSI synthesis, low-power arithmetic, and satellite communication protocols.
- Participated in and led research in program verification and high-speed, low-power arithmetic circuit design.

USC Information Sciences Institute, Marina del Rey, CA 1974-1981
Senior Research Associate

- Formed and led research team in program verification; created and developed the State Delta Verification System for formal program verification of machine language and microcode.
- Supervised the design and implementation of an interpreter for the formal semantics of Ada, a CMS-2 to Ada translator, and tools for specification and emulation of multiprocessors.

Defense Advanced Research Projects Agency, Arlington, VA 1971-1974
Research and Development Program Manager

- Initiated and evaluated research in computer networks, secure operating systems, automatic programming, program verification, artificial intelligence, and speech understanding systems.
- Selected and managed university, non-profits and industrial research contractors

- Prepared budgets and congressional testimony in support of research programs.
- Created concept of National Software Works and established its development program.
- Initiated technology transfer to the military and other branches of government.

Jacoby Systems, Inc.   **1969-1971**
Programmer
- Designed and developed interactive Fortran system.

UCLA Computer Science Department, Los Angeles, CA   **1968-1971**
Senior Programmer and Project Leader

- Headed team developing time-sharing system for Sigma 7 which became the first host on the original Arpanet
- Organized Network Working Group to develop ARPANET protocols; defined protocol hierarchy; designed Host-Host protocol (NCP) and parts of Telnet protocol.
- Initiated the Request for Comments (RFC) series of notes that became the ongoing definitive source of technical documentation for the Internet.

UCLA Engineering Department, Los Angeles, CA   **1966**
Programmer

- Designed instrumentation scheme for Fortran programs which inserted a near-minimal set of probes in one pass through the source code.

UCLA Western Data Processing Center, Los Angeles, CA   **1965-1966**
Programmer

- Designed and developed incremental interactive editing system
- Participated in design of three-node campus-wide network of three IBM 7094 computers

UCLA, various departments, Los Angeles   **1961-1965**
Programmer

Neural net for Biology, concordance and other analyses for English, correlation with split-scale for Education, IPL-V compiler for WDPC.

TEACHING EXPERIENCE

UCLA Computer Science Department, Los Angeles, CA   **1984**
Visiting Associate Professor

Taught graduate courses on application of formal descriptions of computers and on distributed computer systems; supervised master and doctoral students.

UCI Information and Computer Science Department, Irvine, CA   **1978-1979**
Lecturer

Taught graduate courses on applications of formal descriptions of computers and on distributed computer systems; supervised master and doctoral students.

UCLA, Mathematics Department, Los Angeles, CA   **1964**
Teacher

Wrote textbook on programming for high school teachers and taught in UCLA Extension to two classes of high school teachers.

UCLA Computer Club, Los Angeles, CA   **1963**

Organized, led and taught computer programming in Fortran and assembly language to seven sections of high school students.

EDUCATION

Short course, Leading from the Chair, INSEAD, Fontainebleau, France   **2014**
        Three day short course focused on chairing a board.

Ph.D, Computer Science, UCLA   **1977**
        Ph.D. thesis: The State Delta Verification System, a program logic embodying a practical
        version of the frame axiom into a temporal logic and a verification system for machine
        language programs and microcode implementations of instruction sets.

B.A., Mathematics, UCLA   **1968**

Graduate Studies, Artificial Intelligence, Operating Systems, MIT   **1967-1968**

PUBLICATIONS

Various publications on networking, program verification, security, electronic payments, etc. Many are RFCs, available through the various RFC repositories. Several are conference and proceedings publications.

PUBLIC SERVICE

ICANN Board of Directors: SSAC Liaison 2003-2008; Director 2009-2010; Vice Chair December 2010- June 2011; Chair June 2011-Nov 2017.

        Led ICANN through recruitments of two CEOs and the transition to independence and
        the end of the contracts with the U.S. Dept. of Commerce National Telecommunications
        and Information Administration (NTIA).

ICANN Security and Stability Committee (SSAC): Chair, 2002-2010; member 2011-2017.

        Led SSAC from its formation; established working modes, standards, and publications;
        built relationships with the other parts of ICANN.

Krasnow Institute, George Mason University: Advisory Board member 2012-2016.

U.S. Federal Communications Commission, Communications Security, Reliability and Interoperability Council III (CSRIC III), Working Group 5 on DNSSEC Implementation Practices for ISPs, Chair 2012-2013.

Internet Society Jon Postel Service Award Committee: Chair, 2002-2004; Member 2005-2006.

Internet Society: Trustee, 2003-2006.

Marine Biological Laboratory, Woods Hole, MA: Council of Visitors, 1997-2005.

IEEE Internet Award Committee: Member, 2002-2004.

Office of the Chief Technology Officer, District of Columbia: Senior Counselor, 2002-2004.

NRC ARL TAB, Panel on Survivability and Lethality Analysis, 2001-2003.

Studio Theatre, Washington, DC: Board of Trustees, 1998-2001.

National Research Council: Study of Information Systems Trustworthiness, 1996-1998.

Internet Engineering Task Force: Security Area Director, 1989-1994.

Internet Architecture Board: Member 1994-1996.

UCLA Computer Club: vice president 1961, president 1962.

AWARDS

Strowger Award, J. Warren McClure School, Ohio University, 12 April 2018

Internet Society Lifetime Achievement Award, 2017

Global Innovation Award, Innovex2014

Internet Hall of Fame Inductee, Pioneer category, 2012.

Honorary doctorate, Universidad de San Martin de Porres, Lima, Perú, 2010.

2002 IEEE Internet Award, bronze metal, "For leadership in creation of key elements in open evolution of Internet protocols: Network Working Group, Request for Comments process and layered protocol approaches."

Honorable Mention, Putnam Exam, 1963.

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