
Harvey Rubin

Software system architect with 30+ years of experience architecting large-scale distributed processor systems in the telecommunications industry, including operations support systems, data networking products, wireless base station systems, and wireless core network systems

Summary of Qualifications

- Software architect for providing value-added services to LTE wireless networks using innovative overlay network concepts
- Developed software requirements for LTE wireless system core network elements
- Hardware and software architect of CDMA wireless base station systems
- Technical Leader of the Telecommunications Information Networking Architecture Consortium
- Hardware and software architect for a system of nodes performing data networking functions using the precursor of ATM packet switching technology
- Hardware and software architect for a distributed processing system that tests telephone loops

Technical Skills

- Thorough knowledge of operation and management of LTE wireless networks, including air interface operation and base station and core network procedures and behaviors
 - Ability to organize technical aspects of distributed system projects from the start, when requirements are in flux
 - Excellent writing skills, with an ability to create requirements and architecture documentation in a timely manner to support implementation
 - Experienced C programmer and Java programmer; knowledge of C++
-
-

Professional Experience

Chief Scientist

January, 2012 – present

APN, LLC

Dover, NJ

- Developed technical concepts for distributed software to be added to an LTE wireless network to transform the network into an All Purpose Network, where any type of application may be embedded into the network – creates a value-added overlay network for increased capacity and new revenues

- 19 patents granted; 2 patents allowed, ready for issue; 2 applications under review by the USPTO; applications submitted to the EU Patent Office and to the Japanese Patent Office

Consulting Member of Technical Staff; Oct, 1995
Wireless Core Network Lead Systems Engineer; through
Technical Manager, Wireless Base Station Architecture Group; Dec, 2011
 Bell Laboratories, Lucent Technologies, Alcatel-Lucent, USA, Inc. Mountain Road,
 Murray Hill, NJ

- Introduced an in-depth system architecture design phase into the development process
- Performed lead architect role for wireless base station products and wireless core network products
- Wrote all system Operations, Administration, and Maintenance (OA&M) requirements for MME element of the LTE wireless core network
- All projects worked on were successfully delivered to the field, and resulted in revenues counted in the billions of dollars

Head, Information Networking Architecture Department Jan, 1990 – Oct, 1995
 Bell Communications Research (Bellcore) Redbank, NJ

- Devised the concept of an Information Networking Architecture (INA) for the US telecommunications companies
- Managed and guided a department of staff to develop in-depth advanced architecture concepts involving distributed computing and system management that can be built into telecommunications networks
- Output consisted of documentation produced every year per the contracted work between Bellcore and the Regional Bell Operating Companies
- In 1991, introduced the INA concepts to a core set of representatives from several telecommunications companies around the world, and as a result, the Telecommunications Information Networking Architecture Consortium (TINA-C) was created
- Became the first Technical Leader of TINA-C, managing a core team of architects contributed by some 20 telecommunications companies across the world
- Documentation was generated and delivered by the TINA-C core team each year, and specifically tailored to the needs of the worldwide set of telecommunications operators that comprised the Consortium membership

Head, Datakit Architecture Department

June, 1983 – December, 1989

Bell Laboratories

Murray Hill, NJ

- Managed and led the Datakit Architecture Department in the development of hardware and software architecture specifications for each release of this data networking product, which employed precursor technology to the ATM networking standards that were put in place in the mid-1980s
- Led a team of people in the ITU ATM standardization effort, to promote the concepts pioneered in the Datakit system
- Datakit was taken from a research project to a successful, profitable data communications product, which contributed tens of millions of dollars each year to corporate profits

Supervisor, MLT-2 Design Group

August, 1979 – May, 1983

Bell Laboratories

Murray Hill, NJ

The Mechanized Loop Testing System – 2 (MLT-2) is a distributed processing system built with microprocessor technology that was able to access and test any wired telephone loop in the country (the loop connects the customer phone to the central office equipment).

- Inventor of MLT-2, one of the first large distributed computing systems built by Bell Labs
- Principal architect and designer of the MLT-2 system
- Managed and led the development of this system through its early deployment in the field
- Successfully deployed the system (still in operation), which earned the company roughly 10 billion dollars in sales over a six year period, and saved the telephone operating companies over 100 million dollars a year
- Received the Bell Laboratories Fellow Award for my role in designing and developing MLT-2

Member of Technical Staff

June, 1970 – July, 1979

Bell Laboratories

Murray Hill, NJ

- Hardware and software design engineer for loop transmission systems and for the Mechanized Loop Testing System – 1 (MLT-1)
 - Work on loop transmission systems resulted in the first deployed analog loop carrier system, which increased the number of telephone customers that could be supported on a single wired loop
 - For the MLT-1 minicomputer system, wrote the software that implemented all of the test analysis algorithms specified for the system
-

Education

EngScD	1970
Columbia University School of Engineering and Applied Science	New York, NY
M.S.E.E	1966
Columbia University School of Engineering and Applied Science	New York, NY
Bachelor of Science (Electrical Engineering)	1965
Columbia University School of Engineering and Applied Science	New York, NY

Awards and Achievements

- **Bell Laboratories Fellow** 1982
for Advancing the State of the Art in Distributed Computing as the Principal Architect and Developer of the Mechanized Loop Testing System – 2
- **Senior Member, IEEE** 1988
- **Consulting Member of Technical Staff** 2001
Awarded to not more than two percent of the population of engineers in the company, for continued technical leadership, year after year, in product development

Patents

- Over forty-five patents granted in the areas of overlay network concepts applied to wireless networks, distributed computing, loop testing systems, wireless base station systems, and wireless core network systems

Organization Memberships

- Senior Member, IEEE
- Member, Sigma Xi