

# Resumé of Edmund R. MacKenty

## Summary:

Senior Software Architect and Project Team Leader with extensive experience defining scalable, extensible, network client/server architectures. Particularly strong in big data management, data structure and algorithm design, team management, and ensuring customer satisfaction. Founded an Internet startup as CTO, ran a solo consulting business for 9 years, and have worked in teams of from three to forty people. In each role, my goal has been to improve the organization and its infrastructure, and the skill sets of myself and my team. I have over forty-five years of experience with Internet technologies and software design.

## Employment Experience:

2012-2025

**Tripadvisor, LLC**

Needham, MA

Principal Software Engineer responsible for Big Data systems for a global travel website. Ensured availability of all data to entire company, developed ETL processes, monitoring tools and more.

- Managed all aspects of 20PB on-premises Hadoop cluster from hardware to data visualization tools, in a team of 3-5 people.
- Responsible for ingestion and protection of all commerce-related data feeds, and compliance with regulatory oversight.
- Helped transition from on-premises to AWS and Snowflake, moving 40K+ tables and ensuring continuous data flows into them during that process.
- Developed tools and procedures on AWS to simplify data access.

2002-2012

**Rocket Software, Inc.**

Newton, MA

Software Architect and Project Lead for a medium-sized enterprise software development company.

- Project lead for virtualization product that manages virtual Linux systems under z/VM on IBM zSeries mainframes.
- Successfully ported security products to mainframe Linux.
- Worked on database log analysis and DB recovery product.
- Instituted company-wide source code control system and other tools.

2004-2010

**25-Seven Systems**

Brighton, MA

Linux guru with a team of talented developers supplying audio time shifting, compression and expansion devices to the broadcast radio industry.

- Created embedded Linux platform and software set common to all products, with secure access to products in the field.
- Set up and host source code control system, created product build system, manufacture software media for shipping.
- Wrote interfaces to 3<sup>rd</sup>-party Internet audio and audio transport classes and feature to store and email dumped audio.

2001-2002

**MacKenty Software Services**

Watertown, MA

Sole Proprietor of software consulting firm, assisting companies with my skills in the areas of software architecture and design, Internet technologies, business practices, project management and systems analysis. Projects included:

- Embedded Linux networking tools
- Serial I/O package for high-performance audio

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- Linux network security

1999-2001

**WebPresence, Inc.**

Acton, MA

Co-founder and Chief Technical Officer of a venture-backed company creating audio user interface technologies for the mobile devices industry.

- Designed architecture for Internet deployment of our proprietary interactive audio system technology, utilizing radio industry content providers, advertisers, telecom and wireless transmission, and emerging voice portals.
- Created architecture for and managed development of a distributed, scalable platform in Java for insertion of individually-targeted advertisements into continuous streaming audio programs.
- Performed all project definition and management tasks for development team. Managed teams of three to six developers for various projects.
- Developed business skills in planning and strategy, management, presentations, and operations.

1997-2001

**Sonicon, Inc.**

Watertown, MA

Co-founder and Chief Technical Officer for a company focused on creating and patenting audio-based user interface technologies.

- Developed system for the representation of abstract concepts using sound.
- Developed techniques to represent HTML and all SGML-based languages using speech combined with non-speech cues.
- Authored patents on the above items, directed attorneys through domestic and international filing processes.

1992-1999

**MacKenty Software Services**

Philadelphia, PA

Sole Proprietor of a software consulting firm working on design and development projects. Projects included:

- A mission-critical, real-time, distributed telephony call-processing server with an embedded, custom, high-level call programming language. This allowed call dialogs to be reprogrammed without taking the system off-line and without expensive software development.
- Design of a distributed audio server to supply on-demand voice recordings to a telephony system.
- Tools to convert UNIX documentation into SGML, working with members of the DOCBOOK standards committee for Unix Systems Labs, Novell and SCO.
- Implementation of CASE systems and UNIX networking debugging at Novell.
- Design and development of an Octaves voice recording object for Lernout & Hauspie's speech group.
- Continued product enhancements of medical voice applications for Kurzweil AI and Lernout & Hauspie.

1984-1992

**Kurzweil Applied Intelligence**

Waltham, MA

Software Engineer on a Research and Development team creating large-vocabulary voice recognition systems in C and assembler on Sun/UNIX, AT/MS-DOS and VAX/VMS systems.

- Involved with all phases of products from definition to release. Designed and implemented the first commercially available voice-driven word processor.

- Tasks included language-modeling, user interface design, real-time programming and inter-processor communications on multi-processor systems, and system specification and design.
- Defined object-oriented programming methodologies for the development team when O-O was a purely academic concept.
- Became the in-house UNIX guru, our resource for all things UNIX.
- Designed and implemented an integrated voice and text processor with its own windowing interface and later ported it to Windows.
- Helped define and maintain heterogeneous network and Internet e-mail systems.
- Became the "go-to" person for assembler- and source-level debugging.

1983-1984	<b>Martin Marietta Data Systems</b>	Princeton Jct., NJ
Programmer for ITSoftware division. Wrote applications and systems software in C, assembler and PASCAL on an IBM-PC to integrate, support and augment a set of diverse desktop applications. Designed and implemented data transfer protocol and format conversion routines, a windowing package, and a device driver for a coprocessor board.		
1982-1983	<b>Carnegie-Mellon University Robotics Institute</b>	Pittsburgh, PA
Research Programmer on the Image Understanding Project developing a three-dimensional spatial modeling program in C and LISP. Learned UNIX and many Internet protocols.		
1980-1982	<b>C-MU School of Urban and Public Affairs</b>	Pittsburgh, PA
Programmer on statistical analysis routines in FORTRAN for an interactive data analysis program. Telecommuted during summers via the Internet.		
1978-1979	<b>HZI Research Center</b>	Tarrytown, NY
Programmer on EEG collection and analysis programs in FORTRAN on a PDP-11/45. Wrote dexterity and response measurement programs for evaluation of learning disabilities in assembler on an Apple II. Analyzed sleep study data on an IBM OS/360.		

## Education:

1979-1983	<b>Carnegie-Mellon University</b>	Pittsburgh, PA
B.S. in Applied Mathematics (Computer Science). Additional studies in artificial intelligence, systems design and cognitive psychology.		

## Patents:

US 6,085,161: Lead Inventor and Author: System and Method for Auditorially Representing Pages of HTML Data.  
US 6,088,675: Lead Inventor and Author: Auditorially Representing Pages of SGML Data.  
US 6,125,347: Co-inventor: System for controlling multiple user application programs by spoken input.

## Systems:

*Operating systems:* Linux, UNIX SYSV/BSD, z/VM, AmigaDOS and Windows.  
*High-Level Languages:* C++, C, Java, Unix Shells, PERL, and LISP.  
*Networking:* TCP/IP, NFS, HTTP, SMTP, PPP, UUCP and SMB.  
*Document Markup Languages:* SGML, XML, XSLT, HTML, VoiceXML, Troff, and PostScript.  
*Source Control Systems:* SVN, CVS, ClearCase/Rational, SCCS, RCS and PVCS.