Ralph Mack

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Software Engineer seeks to apply extensive experience writing software and/or leading teams to build the future through innovative and positive projects.

Qualifications

- **Deep experience in the most popular programming languages on all major platforms.**
  - Languages: Java, C#, C++, C
  - Technologies: ASP.NET MVC,WCF, J2EE, JNI, Axis, Tomcat, SOAP, REST, COM, ATL
  - Platforms: Windows, Linux
  - Databases: SQL Server, Sybase, TimesTen (Oracle RTDB), EF, NHibernate, query optimization
- **Consistently delivers reliable product components on schedule. Examples:**
  - Screen Recording Server (Web Application and Windows Service)
  - Recording Management Web Service
  - Call Center Administrative Web Services
  - Skills-based Routing Service (COM, Pub/Sub)
- **Uses agile practices and continuous improvement to meet quality and schedule goals.**
  - Test-first coding, CSM, SCRUM project management, continuous integration
- **Excels either as individual craftsman or as lead developer of a team.**
  - Only one software defect was found by customers in the Aspect Screen Recording Service in the year and a half between its release and my moving on.
  - Only three bugs were reported against the Administrative Web Services that used our ORM in the six months between its release and the Concerto merger. One was fixed with a metadata change.
  - When Aspect bought PakNetX, the QA Tools I developed were listed as one of the company's major assets.
- **Applies experience in a broad variety of application areas.**
  - Enterprise apps, media, telephony control, IP telephony (VoIP), QA tools, compound documents, imaging, CAD
  - Strong emphasis on event-driven control systems with published interfaces
  - Product development for international markets
- **Employs pragmatism in applying architecture and design to problems.**

Education

University of Connecticut - Storrs, CT - B.S. Computer Science

Affiliations

IEEE & IEEE Computer Society
Association for Computing Machinery (ACM)
CSM (certified February 2010)

Experience

Feb 2010 – Present	Proxy Networks – Boston, MA
	Independent Contractor
	Development of PROXY Screen Recorder (name subject to change)

- Developed first release of a Windows-based screen recording appliance to be used in call centers, internally leveraging PROXY Pro Gateway and Host. (SCRUM, MSTest,

Rally, NDBUnit, C#, .NET 4.0, ASP.NET MVC 2, WFC RESTful and SOAP services, SQL Server, NHibernate, AJAX, jQuery, CSS, COM Interop)
- Performed integration with Avaya switch using mixed native C++ and C++/CLI in IPCoDE environment.
- Collaborated closely with other engineers at Proxy to ensure close fit with the rest of the company's product offering and worked very closely with QA engineer and with partners to ensure that code met acceptance criteria and customer needs.
- Integrated our IIS web application with a third-party alerting and upgrade web application running under a different web server (lightppd) using reverse proxy.
- Put on CSM hat and led daily scrums and sprint reviews, retrospectives, and planning sessions.
- Prototyped various ways to use call center call activity to trigger screen recordings. Multithread solutions using Sofia (in C++) to track SIP events, JTAPI (Java) to watch for native events.
- Prototyped use of Microsoft UI Automation (C#) to track screen activity and warn screen recorder about location of sensitive fields.
- Developed web-based activation server to track, manage, and enforce license usage. (SCRUM, Nunit, SeeNowDo, NDBUnit, C#, .NET 4.0, ASP.NET MVC 3, SQL Server, Entity Framework, CSS, C++ for client library)

2006-2009   *Aspect Software - Chelmsford, MA*
             Senior Principal Engineer
             Development of EnsemblePro and Unified IP

- Led multi-site team of four re-engineering a web service to manage storage and retrieval of voice, screen, and chat recordings of call center customer interactions and voicemail. *(SCRUM, Unit tests, Java, SOAP, Axis, Tomcat, JNI, DirectShow, Sybase)*
- Led implementation of a web service to coordinate and distribute recording of call center agents' desktop sessions across multiple recording gateways. *(Test-driven, Java, SOAP, Tomcat, JNI, COM, Sybase)*

2000-2006   *Aspect Communications - Chelmsford, MA*
             Principal Software Engineer
             Development of IPCS and ECS

- Led a team developing web services for contact center configuration and administration. Maintained code across three releases. As a part of the work, designed an attribute-based ORM framework. *(Test-driven, C#, ASP.NET, SOAP, REST, XML, XSLT, TimesTen (realtime database))*
- Led development of infrastructure for new generation of Aspect software. *(IChannel, .NET Remoting, TIBCO SmartSockets (pub/sub middleware))*
- Developed multi-dimensional call router, for routing calls to agents based on complex criteria *(Test-driven, aggressive refactoring, Visual C++, TimesTen, SmartSockets, Windows Service)*

1998-2000   *PakNetX - Salem, NH*
             Architect/Developer
             QA Test Tools

- Developed a tool to load test company's Internet ACD and H.323 Switch, placing or

receiving up to 200 H.323 calls with media generation, reflection, and statistics from a single process. *(C++, ATL, COM/Events, Windows Audio, H.323, RTP)*

- Developed a similar tool to load test the Chat Switch. *(Java, HTTP)*
- Developed a H.323 gateway simulator to support load testing the switch's gateway communication. *(C++, MFC, H.323, MGCP)*
- Developed a multi-user launcher tool to launch many agents in their own user contexts on one PC to generate load. *(C++, MFC, Windows Login APIs, ACLs)*
- Specified a CSTA Level 2 COM binding for both switch and server. Developed CSTA server simulator to test switch CSTA interfaces. *(C++, ATL, CSTA, automated unit test)* - ***pilot project for use of automated unit test techniques within PakNetX.***
- When Aspect Communication bought PakNetX, test tools, methodology, and H.323 switch technology were cited as major reasons for purchase.

1994-1998 *PictureTel - Andover, MA*
Project Lead/Architect/Developer
Remote Configuration Management

- Developed remote management library for PictureTel videoconferencing systems. *(Servers: C++, Win16, WinCE, Serial; Clients: C++, Win32, OLE Automation/Events)*
- Pioneered use of short code/test/delivery cycles with fixed delivery schedule and variable scope to provide predictable schedule, most important features early, and high quality code. ***These would later be identified as key features of agile development.***

1989-1994 *Digital Equipment Corp. - Nashua, NH*
Network Application Services

- *Development Lead - Software Product Installation Architecture.* Led team in port of the SPIA library from VAX/VMS to Windows NT. *(C, Win32)*
- *Developer - Compound Document Architecture.* Ported CDA development libraries to MS-DOS & Windows: core engine, document format converters, and document viewer. 90%+ of source portable across eight platforms. *(C, Microsoft C 6 & 7, WATCOM 32-bit compiler, PharLap DOS extender, MS-DOS, Windows 3.0)*