David Michaels

dmichaels@gmail.com
Stoneham, MA
781.438.3716

Summary

- Software Engineer.
- Most recent work with Java, Kotlin, Sping Boot, C, Node.js, MySQL, Vertica, Linux for backend services, transaction and other data processing, feeds, search, APIs, authentication, etc; as well as backoffice tools and UI dashboards using AngularJS, JavaScript, Node.js. Previously, similar in .NET, C#, SQL Server.
- Dotcom boom era (Lycos) Web related infrastructure apps, tools, APIs in C++, VB, ASP, XSLT.
- Significant experience with UI library and tools/app in C++, X/Motif, and Windows.
- C and C++ compiler, disassember, debugger development in C, C++, PL/1, UNIX.
- Lately, independently, learning: Swift/UI, iOS ; C++17; and Arduino.
- Previously granted *secret* clearance.

Experience

HYPR Corporation, Boston, MA | *May 2021 – January 2022*
Implemented a Linux PAM in C (with RPM/DEB packaging) for HYPR password-less ssh/scp authentication. Some authentication related backend work in Kotlin, Java, React, MySQL, Redis, Vault.

Cartera Commerce (Rakuten), Boston, MA | *January 2011 – May 2021*
Transaction, member and other not-quite-Big data processing, REST services, some Kafka and other message processing, and search related backend infrastructure apps and tools, using mostly Java, Node.js, MySQL, Vertica under Linux, supporting Cartera rewards shopping malls. Some work with (PGP, OpenSSL) encryption libraries, and two-way SSL Web service consumption. Developed backoffice tools/APIs in Node.js and Web based dashboards/UIs Node.js, Angular, Express. Implemented some integrations with third-party services like Salesforce, Evergage, Okta.

Gerson Lehrman Group, Boston, MA | *July 2007 – December 2010*
Backend and mid-tier development supporting finance related apps for GLG "expert" network. Message queueing and data synchronization services supporting front-end apps. Third-party service integration for address validation, tax calculation, routing number verification for credit-card processing. Developed internal tools, APIs, and Web based diagnostic, testing, and monitoring services. Some SugarCRM maintenance/development. Implementation in .NET, C#, SQL Server, Service Broker.

JumpTap, Cambridge, MA | *February 2006 – July 2007*
Developed internal editorial tools to manage rules database driving Web crawler and search engine supporting mobile apps. Developed HTTP/XML based Web search service consumed by various mobile carriers for smart phone Web search. Enhanced Lucene search engine for custom features, e.g. site collapse, site striping, filtering, counts, etc. Some Web crawler development. Implementation in Java, JSP, MySQL, iBatis, Lucene, Tomcat, Apache, and Linux.

Lycos, Waltham, MA | *September 1997 – February 2006*
Lead engineer for Lycos Entertainment. Implemented apps to retrieve data from partners (movies, showtimes, theaters, celebrities, musicians, books, news), parse/transform, store in database (SQL Server). Created re-usable package of COM objects allowing such feeds to be created via XML config. Implemented HTTP/XML based API handling front-end queries (with full text search), retrieving/merging data from a variety of sources; and zipcode/location mapping service (for theaters/showtimes). Implemented a reference UI using these APIs for testing and guiding UI team. Development in VBScript, ASP, XSLT, C++.

Worked on development of apps aggregating search across a number of dating sites. Developed an extensible, multi-threaded service in C# collecting disparate data from partner feeds to to database (Oracle); ported to run on Linux using Mono. Integration with FAST search technology.

Built downloadable Internet Explorer plugin "search assistant" app, implemented in C++ as Browser Helper Object and Explorer Bar COM objects, its function controlled by remotely fetched XML config. Supported automatic silent

updates. Over ten million downloads/installs; providing significant revenue stream. Built Web based real-time reporting system with UI/dashboard tracking downloads, installs, upgrades, uninstalls.

Implemented .NET based engine for rapid development of Web services to with the retrieve, merge, and transform data from a variety of sources (database, HTTP, filesystem), using XML/XSLT config.

Implemented an editorial tool used to evaluate results for specialized search product using C# and ASP.NET. Contributed to some search engine/service work. Experimented with Lucene.NET.

Helped transition *My Lycos* to more flexible, scalable HTTP/XML (SOAP-like) architecture. Developed COM components in C++ supporting multi-threaded asynchronous HTTP fetches to reduce page latency and improve throughput. Implemented Web diagnostic dashboards/UIs, APIs, to monitor performance. Created COM components in C++ retrieving data from various feeds/APIs (weather, stocks, sports, etc). Built the framework for much of *My Lycos* Web front-end used to generate the personalized pages, mostly in ASP.

Intersolv, **Framingham, MA |** *May 1996 – August 1997*
Enhanced and maintained C++/Views, an extensible cross-platform C++ class library for desktop UI development. Designed and implemented most of the GUI editor and resource browser; created a number of reusable classes in conjunction with this work, e.g. rubber-band, transparent-window, and sash components.

Liant Software, **Framingham, MA |** *January 1994 – April 1996*
Enhanced and maintained C++/Views, an extensible cross-platform C++ class library for desktop UI development. Designed and implemented most of the GUI editor and resource browser; created a number of reusable classes in conjunction with this work, e.g. rubber-band, transparent-window, and sash components.

Language Processors, Inc., **Waltham, MA |** *February 1986 – December 1993*
Worked with small team developing a C++ compiler front-end. Adapted a C++ grammar and designed and implemented a C++ parser using proprietary parsing technology (LL table driven recursive descent); extended this tool to perform unlimited look-ahead required to handle the syntactic ambiguities inherent in C++. Designed and implemented compiler symbol table and its API used in the front-end and by associated debugger. Implemented most of declarations processing and semantic analysis for C++ front-end. Development in C and PL/I under UNIX.

Designed and implemented a full ANSI-C compliant lexical-analyzer and preprocessor. Rewrote major portions of an existing C compiler (LPI-C) front-end in conjunction with its ANSI-fication.

Project lead for LPI-DEBUG, a multi-language debugger for LPI family of compilers. Much bug fixing, development, and re-targeting debugger (originally just MC608x0, UNIX V) to Intel 80x86, Apollo, BSD UNIX, XENIX. Wrote a Motorola 680x0 disassembler. Implemented a standard LPI software install program to manage multiple versions of various compiler/debugger components. Development in PL/I and C under UNIX.

Cadmus Computer Systems, **Lowell, MA |** *January 1985 – January 1986*
Worked with the C and FORTRAN compilers for MC680x0 UNIX workstations, mostly bug fixing and porting. Also developed internal tools. Development in C and MC680x0 assembler under UNIX. Some exposure to early Apple Macintosh development.

MIT Lincoln Laboratory, **Lincoln, MA |** *August 1983 – December 1984*
Member of technical staff (Group 24). Assisted in software management of various BSD UNIX systems (VAX, PDP-11), maintaining software, writing tools, patching/building UNIX kernel. Worked with hardware engineers implementing apps for a logic design / wirewrap system (VALID). Helped support of 50+ scientists/engineers in use of UNIX/C. Development in C/UNIX. Granted *secret* security clearance.

Education

University of Massachusetts, Boston | *May 1983*
B.S. in Computer Science, *Magna cum laude*