

David Michaels

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Summary

Software Engineer. Most recent work with Java, Kotlin, Spring Boot, C, Node.js, MySQL, Vertica, Linux supporting backend services, transaction and other data processing, feeds, search, et cetera; as well as backoffice tools and UI dashboards using AngularJS, React, & Node.js. Previously, similar in .NET, C#, SQL Server. Also (dotcom boom era) large scale Web related infrastructure tools/apps in C++, ASP, XSLT. Significant experience with desktop UI library and tools development in C++, X/Motif. And (C/C++) compiler and debugger development in C/C++, PL/1, UNIX. Lately, independently learning: Swift, iOS, SwiftUI; C++14; and Arduino.

HYPR Corporation | May 2021 – Present

Implemented Linux PAM in C (with RPM/DEB packaging) for HYPR password-less authentication. Some authentication related work in Kotlin, Java, React, MySQL, Redis, Vault.

Cartera Commerce (Rakuten) | 10 years 4 months

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 | 3 years 5 months

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 | 1 year 5 months

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 | 8 years 5 months

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.

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.

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 using via XML config. Implemented HTTP/XML based Web API handling front-end queries and full text search (with SOUNDEX) – retrieving/merging data from variety of sources. Implemented zipcode/location mapping Web service (for theaters/showtimes). Implemented a reference Web UI using these APIs as for testing and as a guide for UI team. Development in VBScript, ASP, XSLT, C++.

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

Intersolv, Framingham, MA | 1 year 3 months

Made significant enhancements to and maintained Allegris Foundation (formerly C++/Views), an extensible cross-platform C++ class library for desktop UI development. Built many UI components, e.g. docking-toolbar, scrolling-window, mostly for Windows and X/Motif (some Mac and OS/2) under UNIX. Designed and implemented platform independent windowing geometry management system (similar to the SwiftUI layout machinery).

Liant Software, Framingham, MA | 2 years 3 months

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 component.

Language Processors, Waltham, MA | 7 years 10 months

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 cleanly perform the 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 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 from scratch a full ANSI-C 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 MC680x0, UNIX V) to Intel 80x86, Apollo, BSD UNIX, XENIX. Wrote a MC680x0 disassembler from scratch. 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 | 1 year 1 month

Worked with the C and FORTRAN compilers for MC680x0 UNIX workstations, mostly bug fixing and porting. Also developed variety of internal tools. Development in C and MC680x0 assembler under UNIX. Some exposure to early Apple Macintosh development.

MIT Lincoln Laboratory, Lincoln, MA | 1 year 4 months

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 system (VALID). Helped support of 50+ scientists/engineers in use of UNIX/C. Development in C/UNIX. Granted *secret* security clearance.

University of Massachusetts, Boston

B.S. in Computer Science, *magna cum laude*.

