David R. Hedges

612-293-7058   david@thelittleman.net   http://David.Hedg.es/

SKILLS

Languages:	C; C++; C#; Java; Python; PHP; SQL; W3C-Standard XHTML and CSS; XML; JavaScript (ECMAScript); CGI
Programming:	Multithreading; network protocol design and implementation; client/server socket programming; inter-process communication (IPC); database design; UML and ER diagrams; Internet RFCs; static and runtime leak analysis; technical and non-technical documentation; runtime debugging; core dump and log analysis
Comp Sci.:	Algorithm runtime and space complexity analysis; object-oriented design; formal languages and automata theory; data mining; buffer overflows
Software:	Visual Studio/msbuild; Eclipse (CDT, EE, Java); gdb/ddd; gcc; clang; make; grep/sed/awk/bash; Windows CMD; PowerShell; git; ClearCase; Mercurial; Atlassian JIRA; WireShark; VMware Server, ESXi; VirtualBox; QEMU/KVM; MySQL; PostgreSQL; Oracle Database; Apache; Tomcat; Splunk; .NET Memory Profiler
Platforms:	Linux (desktop and server; Debian, Ubuntu, RHEL/CentOS); Windows 7-10; Windows Server 2008-2016; Android (SDK, NDK)
Protocols:	DNS; DHCP; HTTP; FTP; SMTP; POP3; 802.11; 802.3; TCP; UDP; XMPP
Process & Patterns:	Publisher/subscriber; SOA; message bus; MVC; RAII; singleton; agile/scrum; test-driven development; scheduling, task estimation, decomposition

WORK EXPERIENCE

Multiple roles, via promotion   June, 2014 – Present
BIO-key International, Eagan, Minnesota

Software Architect, Team Lead, Project Manager (2021–present) — Lead cross-product development initiatives (technical and project lead):
- Design solution architecture (mobile, server, cloud), new software components, integration interfaces.
- Plan and manage development schedule.
- Manage and review development activities and team; plan testing of new software and integrations.
- Evaluate potential partners/products for integration.
- Identify risks, constraints, potential impacts, and mitigation strategies.
- Manage communications with stakeholders, upper management, sales, etc.
- Authored project management documents: SOW, project charter, etc.

Senior Software Engineer (2014–2020) — Develop, enhance, and support customer-deliverable (shrink-wrap and custom) products for server, desktop, Android, and browser platforms. Created and currently run all development infrastructure.
- Designed and developed next-generation object-oriented API/SDK for biometric identification and authentication systems. (C++)
- Developed Java and Android libraries and apps to provide access to BIO-key's native biometric algorithms. (Android SDK+NDK; Java + JNI)
- Substantially improved service to load nation-scale biometric data into high-performance indexed platform; eliminated resource leaks in app and managed/native interface for core library. (C#)
- Designed and developed RESTful APIs, server, and administrative interface for client software and driver download/update. (Java, JAX-RS (via Jersey), JPA (Hibernate), JAXB (Jackson), JUnit, Maven)
- Drove project management and schedule for 12-month customer project; architected solution, implemented server and reference client implementation; managed sprint planning, developers, customer communication.
- DevOps: Proposed, implemented, and now support dev infrastructure including MediaWiki, Atlassian JIRA and Bitbucket (git), Jenkins CI, ProxMox. Manage IT infrastructure (e.g., AD, DHCP, DNS, SonicWall).
- Automated builds; documented build process and dependencies; audited third-party component/license use.
- Provided mentoring, code review, and feedback to team members.
- Created, documented, and executed on-boarding process for new developers.

C++; Java; C#; SQL; Tomcat; PowerShell; Android; Windows; linux; HTML/JS; git; JIRA; Bitbucket

Senior Software Engineer   August, 2011 – May, 2014
Thomson Reuters, Saint Paul/Eagan, Minnesota

Back-end C/C++ development of DataScope Select product used by fund managers, etc, to analyze thousands of financial instruments at a time.
- Designed, prototyped, and implemented message queuing-based replacement for old db-polling-based communication of core infrastructure to provide scalability and expandability for the next 5+ years of growth. (C++; ActiveMQ; protobuf)
- Enhanced IPC, database use, and parallel processing to scale system to billions of instruments analyzed per month (delivered in time-sensitive bursts).
- Spearheaded implementation and adoption of Splunk for rapid analysis of system status and problems; led training.
- Contributed to strong test-driven development workflow/culture.

C++; Python; SQL; Oracle; ActiveMQ; protobuf; Solaris; linux; Mercurial; JIRA; Splunk

Co-Owner, Webmaster, Server Administrator, Editor   October, 2001 – Present
TechwareLabs.com (previously HardwarePub.com), Minneapolis, Minnesota
- Wrote and enhanced server-side core infrastructure and administrative applications.
- Analyzed site and server performance; implemented changes to handle growth.
- Redesigned site graphics, layout, and code for increased efficiency and ease of use.
- Configured and maintained business-critical Linux servers, daemons, backups.
- Interviewed, hired, and managed new staff members for company growth and new ventures.

LAMP; CSS/HTML/JS; WordPress; BIND9 DNS; Postfix

Senior Software Engineer   August, 2006 – August, 2011
Electronics for Imaging (EFI), Eagan, Minnesota

- Led India team in implementing networked product integrations on my requirements, designs, specifications.
- Independently implemented major sales-critical features on existing products in C, C++, ODBC/SQL, and proprietary APIs.
- Analyzed and improved software performance and resource handling.
- Isolated and resolved functional defects in pre-existing code reported by QA, tech support, and customers.
- Wrote and documented utilities for automation of engineering tasks in python, bash, sed, awk, xml, etc.
- Developed and successfully rolled out virtualization for improved development and testing efficiency.

C; C++; Windows; Python; SQL; Siebel; Rational ClearCase; VMware

Technical Consultant, Network Administrator   August, 2001 – January, 2006
alwaysBEthere Wireless Communications, Minneapolis, Minnesota

- Developed custom IT/wireless solutions for customer and internal use — auto-connecting cellular (1xRTT) internet wifi router; reverse tunneling secure cellular web server.
- Coded and maintained internal and external web sites as sales and marketing tools in W3C-compliant XHTML and CSS.
- Maintained, upgraded and expanded network infrastructure to increase efficiency, stability, capacity.
- Installed and configured Windows and Linux HTTP, DNS, email servers for internal and external use and client demos.

Windows; linux; Apache; OpenSSH; Windows CMD; BIND9 DNS; Samba; Active Directory; BES

EDUCATION

B.S. Computer Science, Networking Emphasis   September, 2003 – June, 2006
University of Minnesota - Institute of Technology, Minneapolis, Minnesota

Project Management Professional (PMP) certification   February, 2018
Project Management Institute

Cisco Networking Academy   September, 2002–2003
St. Louis Park High School, St. Louis Park, Minnesota