

# Ray Harris

## Chief Software Architect - ShortTrack

Cary, NC - Email me on Indeed: [indeed.com/r/Ray-Harris/c8e5d49cefcc361e](https://www.indeed.com/r/Ray-Harris/c8e5d49cefcc361e)

Software developer, system architect, and educator with 23 years of experience. Adaptive and creative problem solver, dedicated team member, life-long learner, and can-do professional able to bring an unparalleled depth and breadth of knowledge to understanding requirements, architecting and deploying efficient solutions, and communicating with both management and technical personnel.

Authorized to work in the US for any employer

### WORK EXPERIENCE

#### Software Engineer

IBM - Research Triangle Park, NC - October 2015 to Present

DevOps for IBM Cloud Logging and Monitoring Service

Developed software and solutions to deploy Elasticsearch and Graphite based logging and monitoring service for public, dedicated, hybrid, and local IBM Bluemix cloud customers and internal IBM users the US, UK, EU, and Australia.

Built service from open-source components including, Elasticsearch, Logstash, Kibana, Kafka, Graphite, and Grafana.

Used UrbanCode Deploy, Jenkins, Github Enterprise, OpenStack, Ansible, and Docker to provide Continuous Integration/Continuous Delivery of open-source and custom applications.

Wrote automated monitoring and management software, custom applications to integrate open-source applications with IBM Bluemix authentication, and tenant monitoring and management applications in Go, Python, and Bash.

Improved system reliability from days of downtime to 99.95%+ uptime through automation, performance testing, custom configuration, and custom front-end API filtering to block requests that affected system stability.

As co-team lead for 28 software engineers in the US, Canada, China, and India, set team priorities, assigned issues to engineers, led root cause analysis investigations and reviews, presented service issues and solutions to management and technical personnel on other teams, and led daily and weekly agile development meetings.

#### Chief Software Architect

ShortTrack - Chicago, IL - August 2012 to September 2015

Maintained and added features to cloud based real estate transaction management SaaS platform called ShortTrack as a full stack developer using Rackspace IaaS, Javascript, PHP, Postgres, Nginx, and Apache

Invented, designed, and developed an innovative hybrid SQL/NoSQL database called TectonicDB in Python and MongoDB as an initial platform and proof of concept

Invented, designed, and developed a query/programming language called Pickaxe for TectonicDB

Designed and developed a new version of ShortTrack using Javascript, Python, Django, Flask, TectonicDB, Nginx, and uWSGI

Designed and developed additional REST based servers to support integration with SendGrid, DocuSign, and EchoSign using node.js, Python, Flask, and Go/GoLang  
Managed development process with git and GitHub using Agile/Scrum development methodologies

### **Instructor**

Wake Technical Community College - Raleigh, NC - August 2011 to June 2012

Taught 8 courses in programming, databases, and Linux averaging 30 students per class  
Courses covered C++, Java, MySQL, and Linux

### **Author**

Mike Murach and Associates - Fresno, CA - April 2008 to June 2010

Telecommute

Authored Murach's JavaScript and DOM Scripting, ISBN 978-1-890774-55-4

Co-authored Murach's PHP and MySQL, ISBN 978-1-890774-56-1

### **Web Design Department Head**

ECPI College of Technology - March 2006 to April 2008

Managed course schedules for all web design program students and instructors  
Budgeted for web design hardware and software purchases to maintain state-of-the art facilities

### **Web Design Curriculum Committee Program Coordinator**

ECPI College of Technology - January 2005 to April 2008

Led team of 18 instructors at 6 campuses to develop, review, and update web design courseware  
Developed new BS, AS, and AAS Web Development degree programs

### **Instructor**

ECPI College of Technology - Raleigh, NC - March 2002 to April 2008

Taught 40 courses per year in Web Design and Network Security AAS Programs with 5-30 students per class

Web Design courses covered web page design, web programming (client and server), graphic design, 3D design, multimedia design (audio and video), interactive media, database design and administration, and web site administration

Network Security courses covered Windows administration, Linux administration, A+ certification, Network+ certification, information security, firewalls, and intrusion detection

Faculty advisor for the Web Design Club

### **Owner and Consultant**

Carter Hill Technologies - Raleigh, NC - August 2001 to April 2008

Designed, installed, and managed information technology and network security solutions for small businesses

Services covered server hardware, server software, desktop hardware, desktop software, firewalls, routers, switches, wireless access points, and cabling

Planned and executed operational strategies

Coordinated business development strategies and relationships

### **Subject Matter Expert**

CompTIA - Oakbrook Terrace, IL - October 2002 to October 2002

October 2002

Selected as one of 109 information security subject matter experts

Authored and reviewed test items for first version of CompTIA Security+ exam  
Participated in the final review of the Security+ exam and beta test results

### **Deputy Director, Mission Support (Captain)**

39th Information Operations Squadron, US Air Force - Hurlburt Field, FL - January 2000 to August 2001

Managed daily operations of \$4 million infrastructure of 13 servers and nearly 400 workstations on seven separate networks in an Information Warfare training environment

Led a team of 3 network technicians and 3 help desk personnel to support 50 staff and 50 students

Designed \$250,000 Information Assurance research network

Acted as customer representative for construction of \$1.5 million and 13,000 sq. ft. Information Warfare training facility. Coordinated six installation teams with the general contractor, base civil engineering and communications squadrons, and one Air Force and three national level agencies

Designed \$2.35 million network infrastructure for new Information Warfare training facility. Led team of ten network technicians to install and configure systems

development and instruction of Defensive Information Warfare course materials

### **Information Operations Instructor (1st Lieutenant)**

39th Information Operations Squadron, US Air Force - Hurlburt Field, FL - December 1998 to January 2000

Developed courseware for defensive information warfare classes for the first Air Force combat crew information warfare course and the first Air Force staff level information warfare course

Courseware included instruction in military and civilian telecommunication systems, computer network defense, and other classified topics related to advanced information technologies and information warfare

Taught information warfare lessons and other topics during nine two-week staff courses and three four-month combat crew courses. Presented material to over 350 students

Received Top Secret/SCI Clearance (SSBI completed March 2001)

### **Applied Artificial Intelligence Officer (2nd Lieutenant)**

Air Force Research Laboratory, US Air Force - Rome, NY - July 1996 to December 1998

Reviewed advanced artificial intelligence research proposals

Awarded 80 contracts valued at \$180 million

Managed five advanced artificial intelligence research contracts valued at \$10 million

Worked with principal investigators to resolve budget and labor problems to keep programs on schedule

Demonstrated advanced artificial intelligence hardware and software technologies to lab personnel and visitors

Taught other AFRL lab personnel how to operate and demonstrate these technologies

Co-invented US patent 6,265,880, Apparatus and Method for Detecting Conduit Chaffing

### **Teaching Assistant**

Mathematics and Computer Science Department, University of Memphis - Memphis, TN - August 1994 to June 1996

Taught sixteen computer literacy labs with fifteen students per lab

Taught four computer programming labs using C++ with fifteen students per lab

Taught one college algebra class with thirty students

## **EDUCATION**

### **Master of Science in Computer Science**

University of Memphis - Memphis, TN

1996

## **Bachelor of Science in Computer Engineering**

Mississippi State University - Starkville, MS

1994

## **SKILLS**

Elasticsearch (1 year), Graphite (1 year), Docker (1 year), Ansible (1 year), OpenStack (1 year), Kafka (1 year), Jenkins (1 year), UrbanCode Deploy (1 year), Logstash (1 year), Kibana (1 year), Grafana (1 year), Go (4 years), Python (6 years), Bash Scripting (10+ years), HTML (10+ years), JavaScript (10+ years), Linux (10+ years), PHP (5 years), MySQL (5 years), MongoDB (3 years)

## **MILITARY SERVICE**

Service Country: US

Branch: US Air Force

Rank: Captain

July 1996 to August 2001

## **PATENTS**

### **Apparatus and method for detecting conduit chafing (#US6265880)**

<https://www.google.com/patents/US6265880>

June 2001

Apparatus and method to identify chafing of a conduit, thereby reducing the failure of any system which would be damaged or whose function would be impaired by abrasion of the conduit. Such a system may carry electrical power, fuel, other fluid, hydraulics, pneumatics, optical, or electromagnetic signals. Wear caused by rubbing against external structures is detected by wrapping the conduit with a sensing element, which may be a conductive wire, waveguide, fiber optic cable, or a tube (wound around the conduit or enclosing it) that holds a fluid under pressure. The sensing element is positioned so that chafing on the conduit electrically contacts, breaks, or punctures the sensing element well before the conduit fails. Measuring the end-to-end integrity of the sensing element or performing other tests on it determines whether a chafing object is present, the nature of the chafing object, and where on the conduit the chafing has occurred, thereby indicating that the conduit's integrity will be compromised unless remedial measures are taken.

## **PUBLICATIONS**

### **Murach's JavaScript and DOM Scripting**

<https://www.amazon.com/dp/1890774553/>

August 2009

### **Murach's PHP and MySQL**

<https://www.amazon.com/dp/1890774561/>

November 2010

## **ADDITIONAL INFORMATION**

Core Skills

#### Programming Languages and Frameworks

HTML, CSS, Javascript, PHP, Python, Go/GoLang, Django, Flask

#### Web Application Servers

Nginx, uWSGI, Gunicorn, Apache, node.js

#### Database Servers

MySQL, Postgres, SQL, MongoDB

#### Server Operating Systems

Debian Linux

#### Additional Skills

#### Programming Languages

Ada, ActionScript, C/C++, ColdFusion, Java, Lisp, Objective C, Visual Basic

#### Servers

Red Hat Enterprise Linux, Ubuntu

Windows Server, IIS, MS SQL Server, MS ISA Server, MS Exchange Server, Samba

#### Network Technology

Cisco Routers, Switches, and Firewalls; Wireless Access Points; Fiber Optic Cabling

#### Software Applications

Photoshop, Illustrator, Premier Pro, After Effects, Flash, Maya, Blender, Autodesk Inventor, Word, Excel, Powerpoint, MS Access, MS Publisher, VMware

#### Additional Skills

bash, vi, regular expressions, lex/yacc, vagrant, fabric, REST, SSL, OAuth