

Don Fox

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Portfolio: <https://web-production-a559.up.railway.app>

Summary:

I am a software developer with over 25 years of experience working across diverse industries, including telecommunications, warehousing, healthcare IT, and bioinformatics. My primary focus has been on backend development, with additional contributions to web-based systems in recent years. I have worked extensively on Unix platforms and have developed proficiency in a range of programming languages and runtime environments.

In addition to my technical work, I have had the opportunity to mentor interns and collaborate on complex projects, emphasizing thoughtful problem-solving and reliable system design. I am currently open to remote or freelance opportunities that align with my expertise and interests.

Education:

- **Bachelor of Arts in Philosophy, 1982**
University of Tennessee, Knoxville TN

Technical Training

- **Associate of Science Degree in Computer Science Technology, Cum Laude, 1991**
Pellissippi State Technical Community College, Knoxville TN

Professional History:

EMRTS

<https://emrts.us/>

Note: *Electronic Medical Records Technical Solutions (EMRTS) was a startup addressing various medical IT needs, including medical records, billing, scheduling, provider enrollment, and claims processing, using open-source technology. Across five separate engagements, I worked as a freelance developer, contributing on a project-by-project basis rather than a fixed full-time schedule. The nature of these projects was primarily research and development, often requiring prototyping and occasional collaboration with academics from North Carolina A&T University and other developers via Git and Skype.*

- **August 23, 2023 – September 2024:** Initially worked with interns on Medicaid to prediction research and introduced foundational data science concepts. Later, we added another project to investigate cryptocurrency, that lead onto the development of a Bitcoin indexer prototype that could then developed into a production ready tool. This was still ongoing September, but placed on the back-burner when those students who were involved resumed their studies at school.
Tools: macOS, Windows, the EMRTS Linux network, and GitHub for version control. Development relied heavily on Python 3.x and Flask; Databases used included PostgreSQL.
- **July 2015 – January 2017:** Developed proof-of-concept tools and prototypes for processing medical transaction data (EDI_X12_837) and handling large medical provider datasets (JSON, XML). Extended a web services application for state governments and clinics to facilitate medical provider data registration and validation.
Tools: Python 3.5, PostgreSQL, Django, JavaScript | **Platform:** Unix
- **October 2013 – March 2014:** Worked on research-driven projects related to mobile medical screenings and provider enrollment for state governments. Contributed to developing a Health Information Exchange (HIE) application for hospitals.
Tools: Elixir/Phoenix | **Platform:** Ubuntu Linux, macOS | **Databases:** MariaDB, PostgreSQL, MongoDB
- **November 2011 – March 2012:** Focused on electronic medical records, claims processing, and provider enrollment applications on GNU/Linux. Developed tools for handling JSON data and extended the application's support for additional records processing.
Tools: Python, Django, JavaScript (jQuery, Node.js) | **Databases:** MariaDB, PostgreSQL, Redis
- **July 2009 – May 2010:** Conducted code analysis for GNUmed ([GNUmed Documentation](#)), an open-source electronic medical record system, to evaluate its suitability for client needs. Built a RESTful web service for state medical provider validation.
Tools: Python, Django | **Platform:** GNU/Linux

Quantuvos

Nov 2021 – Feb 2022

I was employed as a *technical consultant* for Quantuvos, a start-up in coaching services, at the request of the CTO. My role involved reviewing and testing code for an MVP website used by coaches and clients to schedule workshops and sessions. I provided recommendations to enhance the site's functionality and robustness. This remote project utilized Python 3.9, Django 3.1, PostgreSQL 14.1, Docker, and Azure.

Orchid Orthopedic Solutions, Mason MI

<https://www.orchid-ortho.com>

Feb.17 2020 – Dec. 11th 2020

A remote **six-month contract position**, later extended to year-end, focused on document processing and archival. This project involved preparing documents (Word, Excel, and PDF) for submission to **EtQ Reliance**. I handled **programmatic modifications** of Word documents, adding required tags and formats for archival purposes and manipulating spreadsheet metadata. Metadata was verified programmatically for accuracy and completeness before proceeding. Development was done with **Python 3.8** and **C#** on both **Windows 10** and **macOS**.

c spire Jackson MS

<https://www.cspire.com>

July 2018 – January 2019

I was **lead developer** working on a "RESTful auto-provisioning API" for managing customer and vendor "services" data. This involved tracking, logging and reporting on customer services provided by C spire and third-party vendor services provided to C spire. The application was for use by the business office and the network system administrator. Tools used included **Python2.7**, **PostgreSQL/SQLAlchemy**, **MySQL**, **Flask** and **Postman**. Development done mostly on **macOS** then ported to a distribution of **GNU/Linux**.

Lowes Inc., Mooresville N.C.

August 2012 – June 2013

A project for refactoring and extending legacy **C** code to accommodate transition to EMV credit and debit cards. The platform was **AIX** using **Oracle** and **DB2** databases. The scope included code analysis, bug fixes, and documentation. I was a contractor.

Hilton, Memphis TN

April 2012 – August 2012

Provided **production support** for the Central Reservation System of Hilton Hotels, with occasional lightweight **C**, **Perl**, and **Shell** programming on **Solaris** and **GNU/Linux**. Worked with **Informix** and **MySQL** databases in a contractor role.

Hewlett-Packard, Nashville Tennessee

May 2010-December 2011

I was **employed** to do software maintenance and troubleshooting for TennCare for the State of Tennessee. This involved a project for refactoring and extending a **SOAP server** (written in **C**) to enhance data exchanges throughout the legacy **MMIS (Medicaid Management Information System)** network to develop monthly report generators for various kinds of medical claims(in **C** and **PL/SQL**). There was also a major project porting the entire application code base over to a new 64-bit **Solaris network** with new compilers and the latest version of **Oracle**. There was some sporadic **technical writing** and documentation.

ACS, Nashville Tennessee

February 2009 - June 2009

Employed to migrate MMIS (Medicaid Management Information System) software and data related to TennCare for the State of Tennessee (**TennCare**) from Hewlett-Packard's infrastructure to the ACS network. Responsibilities included **analyzing and evaluating existing code modules** (written in **C**) and **developing automation scripts in Python 3** for system collection and deployment.

Nationwide, Columbus Ohio

October 2008 – February 2009

Here I worked on daily analysis of annuity data flows and financial services information to detect and correct anomalies. This was on **Solaris** using **Oracle** databases and a **proprietary scripting language**. I began a project to replace and simplify the many proprietary shell scripts with a single script, to be written in **Python 3**, but was unable to proceed due to lay-offs and project cut-backs.

Lexmark, Lexington Kentucky

https://www.lexmark.com/en_us.html

May 2007 – October 2008

This **contract position** focused on **bug fixes, code analysis and refactoring/extending C code** for high-end, secure prototype printers running **Red Hat Linux (RHEL)**. These machines were actually network nodes as well as printers and were targeted for government agencies, military, and financial institutions. I began writing scripts and utilities with **Python 2.6** for integration testing.

IBM Internet Security Systems Atlanta Georgia

January 2007-May 2007

This was a four-month **contract** to **develop tools for porting and rebuilding standard C/C++ applications** from **Microsoft Visual Studio** over to **Unix environments**. The project required that residual resources generated by Visual Studio be used rather than building the applications with the usual Make files on **Unix**. Development took place using **Mac OSX**, **Windows XP** and **Ubuntu** operating systems.

Lowes Inc., Wilkesboro North Carolina

February 2006 – December 2006

This **contract** involved **internationalization of software to be used at Lowe's first Canadian store**. It involved maintenance and extension of existing **C** and **shell scripting**. All development was on **AIX**. The databases involved were **ORACLE** and **DB2**

Cingular Wireless, Alpharetta Georgia

August 2004 – February 2006

This was a **contract** that involved **code extension and maintenance** for a legacy billing engine running on **AIX** and **GNU/Linux** using **ORACLE**. It was written primarily in **C+** with occasional use of shell scripts. I taught a basic course in **C++** to the group responsible for code acceptance testing, and wrote an application for them, in **Perl**, that **automated the configuration of test boxes**.

SAIC, Oak Ridge, Tennessee

February 2003 – August 2004

I maintained and expanded the functionality of a **legacy Perl application** used for network wide resource and account maintenance at the Oak Ridge and Los Alamos National Labs until it was replaced. Development was done on multiple **Unix platforms**, and involved some **ORACLE** development and peripheral **C** coding. I was a **contractor**.

University of Tennessee, Knoxville Tennessee

Center for Environmental Biotechnology

August 2002-October 2003

In this **freelance** job I created some bioinformatics tools for monitoring micro-array gene expression data. This included implementation of a **MySQL database** and an **automated report-generating system** (written in **Perl** and **C** on **Red Hat Linux**). I audited a genetics class designed for medical students and **tutored some of the professional staff and graduate students in Perl programming** that they could use in their research.

Manhattan Associates, Atlanta Georgia

July 2001 – July 2002

Initially a **code maintenance** contract on a **cross-platform warehouse management application written in C++**. Both **Linux** and **Windows** were used, with **Linux** as the primary platform and **Oracle** as the favored database. Tools included **MKS Toolkit**, **Microsoft Visual Studio**, and **Microsoft Advanced Windows Server OS**. After six months, I transitioned to a full-time role, contributing to development and maintenance efforts until the project was affected by company-wide restructuring.

LHS/Sema Group Telecom, Atlanta Georgia

January 2000-July 2001

A six-month contract requiring code maintenance and enhancement, spanning multiple **Unix** platforms, for a large legacy-billing engine written in **C/C++** using **ORACLE**. There were major technical documentation rewrites and I also attended in-house classes on various topics including **Object Oriented Analysis and Design (OOAP)**, and **Oracle Tools** while I was there.

Intellivoice/Premier Technologies, Atlanta Georgia

November 1998 – January 2000

Intellivoice specialized in **multi-media integration R&D** for distributed **Solaris** networks. This included extending fax functionality such as **text-to-speech and speech-to-fax**. I worked on coding problems using mostly **C++** and evaluated third-party middleware (such as **CORBA**) to facilitate communication over such networks. Initially hired as a contractor, I transitioned to a full-time role after six months, contributing to various R&D projects until the company shifted focus following its acquisition.

MCI/WorldCom, Atlanta Georgia

February 1996, September 1998

This **full cycle project to implement a billing engine** for land line phones lasted several years and involved, at times, over twenty developers. Development was on **AIX** in **C++**, **Pro*C** and **ORACLE**. I also wrote a **Perl** application, a one-man project, that processed firearm purchase applications for the State of California (an MCI client). I was a *contractor for six months, then an employee*.