

Casey Fitzpatrick

kcghost@gmail.com
kcghost.github.io
Eastern Time Zone, United States

Work Experience

Freelance Software Engineer

January 2022 - Present
Providing a wide variety of solutions and expertise to my clients

BSP Maintenance Lead

November 2019 - April 2021
Timesys Corporation
Managed a small team providing security solutions to customers

- Customer engagement
 - Primary point of contact for over 20 customer engagements
 - Regularly teleconferenced with customers to provide status updates and take note of new requests
- Team Management
 - Conducted regular scrum meetings
 - Assigned tasks to team members
- Linux security expertise
 - Provided risk analysis of novel vulnerabilities and hypothetical attack scenarios
 - Curated vulnerability database that sources from NVD (National Vulnerability Database) and Canonical
- CI tooling
 - Designed system to automatically rebase Linux forks onto latest mainline kernel
 - Integrated services with Gitlab

Linux Engineer

July 2015 - October 2019
Timesys Corporation
Kernel and application development for embedded platforms

- Consulted for a large variety of large and small customers
- Linux Distribution build system expertise
 - Designed, built, and maintained Yocto layers for embedded systems
 - Developed for and configured Timesys Factory for customers
 - Developed customer device support in AOSP (Android Open Source Project)
- Version control system expertise
 - Applied best practices for commits across many internal and customer projects
 - Cleaned up and rebased years of kernel changes onto new kernel
- Linux kernel expertise
 - Developed CAN driver now integrated in mainline kernel
 - Developed device trees and kernel configs for custom embedded hardwares
- Secure boot expertise
 - Designed UEFI secure boot and encrypted RFS (Root File System) mechanism in Yocto
 - Developed secure boot mechanisms for both x86 and ARM platforms.

Embedded Systems Software Engineer

July 2012 - June 2015
Software Design Solutions
Developed applications for both embedded and desktop platforms

- Web Application Development
 - Developed web application front and back ends for a variety of embedded systems
 - Developed a customizable desktop browser software built for embedded or kiosk applications
- Embedded Application Development
 - Developed embedded applications for industrial systems, audio DSPs, kiosks, GPS and thermostat devices
 - Worked within an on-site team developing an Embedded Linux Medical device
 - Contributed to xig (Xbee Internet Gateway) for support of a thermostat
- Software Application Development
 - Maintenance and improvements on Visual IDE, Configuration console, and flashing utility for audio DSPs

- Variety of GUI applications providing front ends and integration to legacy software
- Test suite for legacy industrial system software
- Audio DSP instruction set simulator/debugger
- Windows device driver building and signing

Contributions

- Linux CAN driver
- Ansible bug fixes
- GTK+ bug fix
- WebKitGTK+ bug fix
- BetterJoy bug fix and improvement
- Several small projects
- Hex tile holder model

Skills

- Programming Languages
 - Assembly
 - C
 - C++
 - C#
 - Java
- Scripting Languages
 - Python
 - Javascript
 - PHP
 - AWK
 - Bash
 - Batch
 - Matlab
 - Makefile
 - OpenSCAD 3D Modeling Language
- Technologies
 - SQLite
 - ZigBee
- Web Development
 - HTML
 - CSS
 - CGI
 - jQuery
 - Bootstrap
 - NodeJS
 - Python
- Platforms
 - Yocto Embedded Linux
 - Timesys Factory Embedded Linux
 - WinCE
 - Android
 - Arduino
 - PIC Microcontroller
 - DSP
- GUI Toolkits
 - GTK+
 - WinForms
 - Eclipse SWT
 - Embarcadero VCL
- Version Control Systems
 - SVN
 - GIT
- Electrical Engineering

- Soldering
- 3D Printing

Education

Bachelor of Science in Computer Science
East Stroudsburg University, Pennsylvania
Majors: Computer Science, Computer Security
Minor: Mathematics
GPA: 3.8
Graduated May 2012

- Summer Seminar for Outstanding Sophomore Students
- Summer 2010 Study Abroad in China
- ESU Honors Program
- ABSCUF Honors

University Projects

CubeSat Research and Development Designed and built CubeSats, a 10x10x10 satellite standard able to function as a secondary payload on rockets, using PIC microcontrollers programmed in C.

Development of Psychological Studies Developed web applications for use in carrying out scientific studies.