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Kyryl Melekhin

Software Engineer with 4* years of experience with x86_64 assembly, C, C++ building high quality software for x86_64 desktop computers. Expertise in reverse engineering, debugging, test driven development on Linux and Windows. Knowledgeable in modern graphics stack and APIs such as Vulkan, OpenGL, DirectX9 and rendering techniques. Experience working with embedded systems such as: Arduino, Raspberry pi, esp32. Proficient in unix system administration and cli tools, having complete understanding of the common web server stack and various front end technologies. Experience with the inner workings of the Linux kernel and configuration.

SKILLS

Programming Languages	C, C++, x86, GLSL, HLSL, Posix Shell, Python, JS, PHP
Database Management	MySQL, Sqlite, MongoDB
Version Control	Git, Github, Gitlab
Frontend	HTML5, CSS3
Other Tools	busybox, binutils, make, cmake, gcc, gdb, valgrind, vi, radare2, strace, nmap, ssh, nginx, openssl, nodejs, npm, glslangValidator

EXPERIENCE

Project Nextfb — *Software Engineer*

May 2022 - June 2022

- Better state management in linux framebuffer terminal.
- Added support for bdf bitmap font glyphs.
- Special keyboard selection mode for copy/paste operations.
- Working with libfreetype2 library.

Project Pikevm — *Software Engineer*

August 2020 - September 2021

- Designed state of the art optimized regex engine based on the works of Russ Cox in C99.
- Included UTF-8 support and standard language features specified by POSIX.
- Solved incorrect submatch extraction in the original research paper achieving constant memory usage.
- Constructed over a 100 test cases in the test suite, which resulted in fewer regression bugs.

Project Nextvi — *Software Engineer*

August 2020 - September 2021

- Custom version of Neatvi text editor adding over 50 new features in C99.
- Implemented a builtin file manager which can do bulk file and unix permissions modifications.
- Fixed and reported over 10 bugs with the original version.
- Increased performance by 2X and refactored 80% of the original source code.

Project Auto Refresh Plus — *Frontend Engineer*

September 2020 - February 2021

- Programmed Auto Refresh Plus Chrome extension using JS, HTML5, CSS3.
- Introduced a preset system, which greatly enhanced program usability by allowing users to create profiles.
- Modified in ability to inject JS code on page, script actions like button click with custom timings.
- Added ability to block network requests, wait for redirects, cacheless page reload.

Project Xkeyboard — *Software Engineer*

July 2020 - December 2020

- Wrote an on-screen keyboard using C99 that precisely simulates a real keyboard.
- Perfected resizeable and scalable gui using X11 for drawing.
- Created icons and buttons in pgm format.
- Developed conversion utilities for pgm format directly to C which speed up the startup time by 2X.

Florida Institute Of Technology, Melbourne FL — *Graphics Engineer Internship*

November 2019 - June 2020

- Developed a custom physics simulation 3d engine using C++ and Vulkan api.
- Demonstrated the final product during physics 3 class lecture.
- Used a custom version of bullet3 physics simulation library to achieve accurate collision detection.
- Enhanced mesh rendering performance using meshoptimizer which simplified the geometry by 50%.

Project EngLearn — *Software Engineer*

January 2019 - March 2019

- Wrote a program using C++ and WxWidgets that can read from a database and compare translations.
- Attained UTF-8 clean input user interface.
- Built a string randomizer, allowing the users to quiz themselves on translations.

Gas Powered Games, Seattle WA — *Software Engineer*

November 2017 - June 2018

- Improved graphics draw call performance by %10.
- Patched desynchronization issues with P2P networking and replay files.
- Made a custom modpack and new game mechanics that peaked 1000 downloads a month.
- Participated in developer and community meetings.
- Created an x86 patcher to fix game engine bugs and allow custom code execution.

EDUCATION

Florida Institute Of Technology, Melbourne FL — *Computer Science*

Broward College, Davie FL — *AS Software Dev*

Cooper City High School, Cooper City FL — *4.3 weighted GPA*