

ADINARAYANA PERABATTULA

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Professional Summary

Software Engineer proficient in all phases of software development lifecycle. Adept at working with Agile and Scrum methodologies to accomplish project milestones according to specific timeframes. Skilled using C, C++, Python and other programming languages to complete work. Highly organized and detail-oriented professional with 5+ years of progressive experience in field.

Technical Skills:

- ❖ **Programming Languages** : C, C++, Data Structures, Python, System Programming, Object-oriented development.
- ❖ **Scripting Languages** : Shell Scripting(Bash).
- ❖ **Other Tools** : IBM Rational DOORS, GIT, JIRA, Confluence, IBM Synergy, QPST/PCAT, QXDM, Crashescope, MobaXterm, Putty
- ❖ **Operating Systems:** : Windows, Ubuntu Linux.

Roles & Responsibilities:

- ❖ Making AOSP builds for PIXEL mobiles to find vulnerabilities in Linux kernel.
- ❖ Preparing KASAN and ASAN builds for pixel devices.
- ❖ Preparing Android build for every month with the latest vulnerable exploits.
- ❖ Experience in debugging the code using tools like JTAG.
- ❖ Experience on Qcom tools QPST/PCAT, QXDM, Crashescope.
- ❖ Distributed version control system GIT.
- ❖ Project management tool JIRA.
- ❖ Integrated New Media Hardware's (LRU) in the Test Framework for the Boeing's A380 and 777x.
- ❖ Basic Knowledge on DO-178C and DO-254 Standards.
- ❖ Modified existing code to replace problematic functions with optimized content.
- ❖ Implemented C and C++ based testing features to use on final product.
- ❖ Evaluated project requirements and specifications and developed software applications that surpassed client expectations.
- ❖ Documented all software development methodologies in technical manuals to be used in future projects.
- ❖ Experienced with principles and best practices of Software Configuration Management (SCM) in Agile and scrum methodologies.
- ❖ Testcase scenario identification and update the test plan.
- ❖ Developing Hardware Verification Cases, Procedures to test the Device Level Requirements and their traceability to Device Level Requirements.
- ❖ FPGA Validation and Verification on Target hardware and failure analysis to meet DO-254 Standards.
- ❖ Hardware Test Results, and Accomplishment Summary Documentation.
- ❖ Follow-up on the issue that have been escalated to respective teams until the issue is fixed.
- ❖ Taking ownership of issues and escalations, perform troubleshooting, research and resolution.

- ❖ Strong analytical skills with a knack of getting solutions to problems.
- ❖ Highly motivated, quick learner, team player with good technical and analytical skills.

Employment Experience summary:

- **Qualcomm (Wipro India Pvt Ltd)** – Senior Software Engineer, May 2021 to Present.
- **Alpha-Numero Technology Solutions Inc.** - Embedded Software Engineer, May 2018 to April 2021.

PROJECT PROFILE:

PROJECT 5:

Title : Countermeasures on Q6 images and Automation
Platform : Linux/Windows
Language : C, Shell Scripting, Python
Description :

This project involves finding memory related security vulnerabilities in the systems and mechanisms by which these vulnerabilities can be mitigated and write a set of code which try to adversarial modify memory in a way that it should be blocked by generic system-level security countermeasures to determine if the countermeasure/mitigation is active.

Roles & Responsibilities:

- Tracking down all counter measures available for attach surfaces (like ASLR, DEP and stack protection etc.) and other memory features (like zero-page fault, safe heap etc.)
- Suggesting / reporting to the respective team in case of unexpected behavior of the memory mitigation features

PROJECT 4:

Title : Running Vulnerability test suite (STS/CTS)
Platform : Linux/windows
Description :

Running STS/CTS test suite on multiple SPs to detect the vulnerabilities are patched or not. If we found any failures, will work with the respective team to get it patched.

Roles & Responsibilities:

- Generating the test suite package by adding all available POCs
- Running the STS/CTS on different target SP's. Analyzing the failed testcases and debugging the root cause of it.
- Failure aggregations from all the tests and working with the respective team to solve patching issues.

PROJECT 3:

Title : QUALCOMM chipsets and proof of concept development
Platform : Linux
Language : C, kernel Programming
Description :

This project involves in detecting security vulnerabilities using proof of concept (POC). Understand the security vulnerability like buffer overflow/ Use after free/ double free/ Information leak etc. and develop the POC. Then executes the POC on device to reproduce them or detecting the bug in the device software. It includes QCOM security vulnerabilities which are part of Google APB, team delivers POCs to Google. Eventually these POCs might be included in Google STS.

Roles & Responsibilities:

- Analyzing the issue.
- Developing the proof of concept (PoC) code from the userland.
- Reproducing the issue with code on hardware.

PROJECT 2:

Title : ACE NM Hardware

Platform : Windows

Description :

Primary Flight control Unit: DAL LEVEL A Hardware Verification, Followed DO – 254 Avionics Standard, Performed as Developer for this project and was helpful for completion of developing on time with almost zero findings from Client.

Roles & Responsibilities:

- Hardware Testing (FPGA testing on Target Hardware) → Created methodologies to robustly verify the FPGA designs on Target Hardware by using the verification cases created.
- Design Artifacts: Requirements, Conceptual, and Detailed Design Documentation
- V & V Artifacts: Hardware Verification Cases, Procedures and Results Documentation.
- FPGA Target Testing: Customer Proprietary Languages, and C.
- Reviewed the Procedure and Verification Case.

PROJECT 1:

Title : In Flight Entertainment (IFE)

Platform : Linux

Language : C

Description :

In Flight Entertainment systems in Aerospace Domain, Followed Agile Methodology, DO – 178 Avionics Standard, Performed Development and Testing for this project and was helpful for completion of project on time with almost zero findings from Client.

Roles & Responsibilities:

- Implemented the Tests for the Different LRU's (Line Replaceable Unit) in Aircraft in Aircraft using C, C++, Python.
- Expertise in the Design verification test procedure for validating the Device.
- Created the scripts to generate the packages for the LRU's.
- Good Knowledge on the software development cycle methodologies.

Educational Qualification:

- ❖ B. Tech from St. Peters Engineering College (JNTUH University) with Aggregate of 74% (2013-2017).
- ❖ Intermediate from Sri Chaitanya Jr College with Aggregate of 91% in (2013).
- ❖ SSC from SAI RAM VIDYANIKATHAN with Aggregate of 82% (2011).

Strengths

- ❖ Ability to learn new technologies with ease.
- ❖ Adaptability to new circumstances.
- ❖ Comprehensive Problem-solving abilities.

(P. Adinarayana)