

SAURAV SUMAN

Software Developer

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Bangalore, India

With 1.8+ years of experience in software development, I have a strong apt for exploring new Deep Learning, Quantum & Cybersecurity technologies. Accepting challenges and opportunity, which reorganizes and utilizes my true potential while nurturing my analytical and technical skills.

EXPERIENCE

Associate Software Engineer

Robert Bosch

July 2019 - Present

Bangalore

Working as a Security Developer on Embedded microprocessor in an agile environment. Developing modules for Autonomous Driving functionalities and Security, Involved in multiple modules such as Exploits on the Autonomous Driving, Secure on board communications, Lane & Free space Detection Autonomous Driving Functionalities, Secure boot, Crypto Stack Libraries Acceptance Tests for AD-vehicles. Currently, I am topic owner for Secure On Board Communication & Secure Inter-node Communication on microprocessor

- Having around 1.8+ years of experience in Software Development gained good understanding of Adaptive AUTOSAR layer(Security & Middleware) - BSW.
- Good experience in Nvidia & Intel Denverton.
- Good knowledge on Software Development Life Cycle (SDLC- V Model) and AGILE process.
- Exposure to Development of Security Features on microprocessor.
- Adequate exposure to Aurix. TC39x
- Micro processor known : Nvidia DD-AGX Xavier Autonomous Driving, Intel Denverton.
- Communication Protocols : Baics of Uart and SOME/IP over Ethernet
- Architecture : Arm-aarch64le, x86
- Design and Traceability: Enterprise Architect.
- Tracking and Configuration: Jira.
- Version Control: GIT

SKILLS

Problem Solving

Team Player

Time Management

Critical Thinking

Leadership

PROJECTS

Security Module Development on Intel Denverton

- **Recently**, fixed ancient bugs in s/w, which eliminated the issues of key exchange & sw Lockstep.
- Topic owner for Secure On Board & Secure Inter-node Communication on microprocessor.
- Resolution of problem tickets and provide bug fixes

DA Core on Xavier Microprocessor

- **Recently**, adapted changes for concept of multiple publishers & subscribers for driver assistance functions such as traffic in parallel lanes and forward collision avoidance. This reduced the run time of functions from 30ms to less than 10 ms using IPC mechanisms iceoryx as middleware and semaphores.
- Ported Bosch native Driver Assistance functionality from micro-controller.
- This was the PoC that was done first time, entire Bosch wide. Demo to multiple Teams in Germany & India.
- This project has peeked interest of customers such as BMW, Toyota etc.
- Published paper in Bosch scientific journal.

Variant Handling for Secure Inter-node Communication

- Developed variant handling module for secure inter-node communication for communication across ECU's.

Deep Learning Application Development with HAM

- HAM is high-availability manager ensuring availability of machine 99.99% of time. Developed deep learning application with HAM api's using State Machine model.
- Demo to the multiple Product Owners across Bosch Group in Germany.

Acceptance Test for crypto-stack (System level)

- Deriving test specifications for crypto stack and writing test scripts for the delivered ara::crypto Adaptive autosar.
- Gained deep knowledge of the ara::crypto API's and used them in applications.

TECHNICAL SKILLS

C C++ Python Docker Linux

Kali-Linux QNX Azure MS-Office

MS-Excel JIRA Git DOORS ALM

HTML EA Architect Docker JavaScript

Hadoop Oracle Database MySQL Pandas

Tensorflow Robot Framework

Micro controller known: AURIX (TC397)

Micro processor known: Nvidia DDAGX, Intel Denverton

LANGUAGES

- English
- Maithili
- Hindi
- Nepali

ACHIEVEMENTS

- 2021- Published Learning Papers on usage of Dockers in Autonomous Driving in Bosch Feber.Bosch
- 2020- Bosch Spot Award Winner.
- 2020- Bosch Silver Awards Winner.
- 2018- Winner in Speech & Communication skills organised by Samsung R&DSamsung
- 2017- Participated & represented college in ACM-ICPC
- 2017- Participant in SandBox-Hackathon.SandBox
- 2011- A - Certificate in National Cadet Corps. Certificate awarded by 26th Bihar Batallion.NCC

HOBBIES

Sports: Soccer, Badminton, Driving

Music: Guitar, Rock

Education: Machine Learning, AI, Cyber security

Interests: Gardening, Trekking, Computer gaming

DECLARATION:

I hereby declare that the above information is true to my knowledge.

PROJECTS

Lane & Freespace Detection for Low Speed Autonomous Driving Vehicle

- Developed a Single Point feeder to both Lane & FreeSpace model, and used output of both to find freespace on road.
- Optimised the code and achieved parallel processing on both algorithms
- Reduced processing time and compatibility across several libraries on target using Docker.
- Published paper in Bosch scientific journal.

Automation of ECU reset in Jenkins

- Created execution manager to ECU reset using shared Priority queue & shared memory.

Implementation of usage of Security Engine for AD.

- Crypto accelerators are provided in hardware accelerators used for crypto computations.

Buffer Exploits on AD Target

- Demonstration of buffer overflow on autonomous driving kits, stack exploit to the visiting teams from Germany.

Quantum Teleportation

- Teleportation of integers over quantum communication channel.

Settlement of Pension Cases & ETappal for Southern Western Railways

- Develop a system to keep track of the pension cases & provide real time statistics of the cases to the end user.
- The project is being centrally implemented in Indian Railways.

STRENGTHS

Self motivated Hard-Working

Keen Learner Positive thinking

Quick-Problem resolution

EDUCATION

B.E in Computer Science & Engineering

KLE Technological University

📅 2015-2019

📍 Hubli

CGPA - 9.23

High School

St. Michael's High School

📅 2013

📍 Patna

Percentage - 76.8