Melvin "Mel" Malabanan
Software Engineer

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Professional Summary

Highly motivated professional with over 10 years of experience in embedded software engineering and 12 years in the automotive industry. Skilled in project management, leadership, team building, customer support, communication, and customer relations. Able to thrive under pressure and meet tight deadlines. Has developed strong skills in managing projects, leading and motivating teams, providing excellent support to customers, effectively communicating with stakeholders, and building positive relationships with clients. Confident to take on new challenges and deliver high-quality results in a fast-paced environment.

Skills

Project management
- *Software Development Lifecycle*
- *Agile / Scrum*
- *Mentorship*
- *Issue tracking*

Embedded Systems / Software
- *Build manager / environment*
- *Debugging*
- *Unit testing*
- *Schematic reading*
- *Schematic analysis*

AUTOSAR
- *Basic software configuration*
- *Communication stack*
- *Diagnostic stack*
- *Memory stack*
- *MCAL configuration*

Programming Languages
- *C / C++ / C#*
- *Python*
- *Rust*
- *CAPL*
- *Make*

SW Configuration Management
- *Git*
- *SVN*
- *Bitbucket*
- *Github*
- *SAccurev*

Protocols
- *CAN*
- *SPI*
- *UART*
- *UDS*
- *I2C*

Microcontroller
- *Infineon TC2xx / TC3xx*
- *TI Tiva C (TM4x)*
- *Freescale (MPC56/7xx)*
- *Renesas v850/RH850*
- *NXP S32K*
- *STM32*

Tools
- *VS Code*
- *Visual Studio*
- *Understand for C++ (Scitool)*

Work Experience

Sr. Software Engineer	IAV, Inc., Northville, MI	May 2022 - Now

- Requirements generation for a range of projects, customers and products
- Software Architecture design for range of projects and customers
- Design, implement and test safety related embedded software
- Work closely with the customer to bring up and debug new hardware
- Support architecture design and development
- Develop software in an ASPICE compliant process
- Develop device drivers and middleware for interfaces like CAN, LIN, Ethernet, etc.
- Review software requirements with the customer (internal & external)
- Implement software functions based on requirements
- Participate in SW code reviews
- Create SW documentation
- Support validation test plan creation
- Execution of software validation test plans
- Review test case results
- Implement change based on test cases results and change requests
- Support planning and execution of engineering activities as directed by supervisor or senior team members
- Support customer meetings
- Support business and strategic company development opportunities
- Demonstrate a willingness to learn and build technical knowledge and ability
- Maintain ISO required documentation, project diary, open issues list, task management system (i.e. JIRA) for multiple projects

Sr. Software Engineer I	BorgWarner, Inc., Auburn Hills, MI	April 2017 – May 2022

- Global software integration lead for new BorgWarner product
- Created integration test strategy for software components developed at various technical sites
- Developed regression test for system
- Project involved use of AUTOSAR basic software and various drivers and application software components
- Re-architected the AUTOSAR diagnostic stack for a project that had tight deadline
- Lead the software cybersecurity team in development
- Site administrator for software configuration management (Bitbucket) at BorgWarner
- Led training on Bitbucket usage for all of site employees
- Provided support for unique issues with Bitbucket
- Site lead for development of continuous integration/continuous delivery at Auburn Hills location
- Collaborating with other technical sites to design a global CI/CD deployment strategy

Project

For the capstone project at the University of Michigan - Dearborn, an autonomous lawnmower was created. The robot was designed to navigate a designated area using various sensors, such as GPS and a USB camera, until the area had been mowed. It would avoid any obstacles in its path. See link for details.

Education

University of Michigan, Dec. 2011
Dearborn, MI
  Bachelor of Science in Electrical Engineering
Schoolcraft College, May 2008
Livonia, MI
  Associates In Engineering

Certificates / Training

ASPICE Fundamentals
Scrum Master (CSM)
Vector
  Microsar – AUTOSAR solution
  Microsar – Global B
  CANoe / CANalyzer / CAPL
  CANdela Studio
  Diagnostics UDS
Python
  Programming for Everybody
  Python Data Structures
Harvard - TinyML Fundamental

Software Engineer II	BorgWarner, Inc., Auburn Hills, MI	November 2015 – April 2017

- Determined customer requirements for embedded software development
- Integrated software using AUTOSAR Basic Software with GM SUM for All Wheel Drive electronic control module
- Focused on CAN networks, UDS diagnostics, cyber-security, ECU power moding, and fault management
- Involved in ECU requirements engineering, software design, software testing, and software release
- Verified hardware design and schematics

Project Engineer	Vector, Inc., Novi, MI	June 2012 – November 2015

- Determined customer requirements and performed embedded software CAN stack integration
- Managed overall project
- Troubleshooted software and other issues with customer's implementation and provided technical support for embedded software
- Met with customers regularly to establish positive, long-term relationships
- Worked with product developers and test engineers at OEMs and suppliers

Electronics Engineer	Denso Int'l Am., Inc., Southfield, MI	September 2011 – June 2012

- Reviewed and understood customer requirements, specifications, drawings, and engineering changes for Memory Seat Module
- Completed test requests and analyzed data to perform product testing from vehicle checks to design validation to product validation testing
- Participated in benchmarking activities
- Assisted in the creation of technical reports and presentations

EMC Test Engineer	Yazaki N.A., Canton, MI	May 2010 – August 2011

- Tested various automotive products for electronic interference across a range of frequencies, including the AM band and GPS bands
- Reviewed customer specifications and standards with supervisor and/or customers to ensure correct test implementation for engineering development, design verification, product verification, and annual verification
- Internship

Infantryman	U.S. Army, Fort Benning, GA	DD-214 available upon request

Performed as a member of a fire team during drills and live combat, learned and used different combat systems.