

Bhushan Warudkar

Embedded Engineer.

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Career Synopsis:

- I have 5+ years of experience working as an RTL Design Engineer in FPGA design and the embedded domain.
- Hands on experience in FPGA based Design, functional verification, and Debugging skills at board level.
- Experience in RTL design microarchitecture, coding, integration, and debugging on FPGA boards.
- Experience in digital logic design and FPGA/RTL design flow, implementing and verifying RTL modules using standard FPGA synthesis and simulation tools.
- Hands on experience using FPGA, AMD[Xilinx] Devices and lattices Devices.
- Having good knowledge of Digital Design & High-Speed protocol.
- Experience using real-time debugging tools such as Xilinx ChipScope Pro (in ISE), Reveal Analyzer and Controller, and Integrated Logic Analyzer (ILA) in Vivado at the system level
- Experience in writing test benches for module level and top level of the design in VHDL and Verilog.
- Some exposure with Zynq-7000 IP integration for High Speed IOs.
- Experience in embedded projects using Embedded C with ARM Cortex processors.
- Good Knowledge of embedded Processors as RISC-V/ARM Cortex and Embedded Firmware development.
- Good Knowledge of Synthesis, using Timing Constraints for static Timing analysis and Linting, CDC using SPYGLASS.
- Understanding of scripting language like Tcl and Python.

Technical Skills:

- Programming Language: VHDL, Verilog, System Verilog, Embedded C and Python.
- Worked on protocol: SPI, I2C, UART, AXI and Knowledge of MIL-STD 1553, Ethernet, PCIe,.
- Synthesis: Xilinx ISE, Vivado, SDK, EDK, .
- Simulator: Modelsim and Xilinx Vivado.
- FPGAs: Xilinx FPGAs and Lattice FPGA.
- Lab Tools: Chip Scope Pro Analyzer, Tera term.
- Hardware Tools: Oscilloscope, Function generator, Multimeter, signal generator, Network Analyzer.



Educational Qualification:

Degree	School/College/Institute	Year of Passing	CGPA/ Percentage
M.Tech (Electronics)	V.J.T.I, Mumbai	2017	7.10
B.E(EXTC)	Sipna C.O.E.T, Amravati	2013	65.08%
H.S.C (State Board)	Municipal Junior College, Paratwada	2009	77.83%
S.S.C (State Board)	Subodh High School, Achalpur	2007	74%

Experience Summary:

Role/Designation	Employer	Duration
Senior FPGA Engineer	FPT Software	20 Nov 2023 to 25 Oct 2024
FPGA Design Engineer	Cryonics Innovation Labs Pvt Ltd	04 Sep 2023 to 27 Oct 2023
RTL Design Engineer	Capgemini	14 Oct 2022 to 3 Aug 2023
FPGA Design Engineer	Cyient Ltd	20 Dec 2021 to 06 Oct 2022
Design engineer	Processware System Pvt Ltd	10 May 2021 to 17 Dec 2021
Embedded Engineer	Bharat Electronics Ltd	06 Nov 2019 to 31 Mar 2021
Embedded Engineer	STEMROBO Technogical Pvt Ltd	13 Aug 2018 to 31 May 2019

Project Experience:

Project#1: Lidar slim FPGA (Automotive)

Client : Valeo Germany

Tools & HDL: Lattice Radiant, Vlvado, Model Sim, VHDL.

FPGA : Lattice Crosslink-NX FPGA

Role : Requirement, develop, validate digital circuits on FPGA using VHDL/Verilog.
Write test benches based on various test scenarios to verify Design.
Debug existing VHDL Codes and run VHDL and system simulation.

Contribution:

- Developed Interface between LATTICE FPGA AND MEMS sensor using SPI communication protocol to read acceleration, angular velocity and temperature and verify and validate on Hardware.
- Validating RTL Design in Lattice Crosslink-NX FPGA Evaluation board with Radiant version 2022.1.
- Developed self -checking testbench using VHDL and verify as per requirement in simulation.
- Developed various technical documents like Micro Architecture, Design Proposal, simulation result.
- Design and execute test cases based on the customer requirement.
- Analyze executed test results and confirm that the design behavior respects the requirement document.
- Experience in tool like DOORS, Team Forge, Git and Eclipse.
- Carried out the complete project by meticulously following the ASPICE (Automotive SPICE) process, ensuring adherence to industry standards for software development and quality assurance.
- Contribute to the development of project timelines and milestones .

Project#2: MR Healthcare

Client : Philips Pune

Tools : Windchill

Roles : Understanding Windchill cPLM software for release parts of PCBA and Worked on Reverse Engineering

Contribution:

- Part of R&D Life cycle Engineering (LCE) team for the Magnetic Resonance (MR) business unit.
- Contributing towards End of Life, Design Change & DEFOA (Defect on Arrival) reduction program.



Project#3: Antenna Pointing System (APS)(Rustom-2)

Client : DRDO, Hyderabad

Tools & HDL: CODE BLOCK, Xilinx ISE, Verilog, Embedded C

Role: Verification & Validation, Documentation and Review of Artifacts to be performed for Safety Critical Real-Time Systems Hardware according to DO-254 and DO-178 standards.

Contribution:

- Functional verification and Validation of System.
- Code Review of Embedded C.
- Knowledge of SDLC
- Understanding software Document like TS, SRD, SDD, etc

Project#4: Dolphin

Client : Indian Navy

Tools & HDL: Xilinx ISE, Vivado, Qt & Verilog/VHDL, Embedded C.

FPGA : SPARTAN and ARTIX

Role : FPGA based RTL design, Functional testing and debugging of System.

Contribution:

- Worked on spartan and Artix FPGA, PCB boards software flashing and simulating through Xilinx software tools like ISE, VIVADO, SDK, EDK, IMPACT, CHIPSCOPE, etc.
- I involved in activities of ESM system viz. PCB hardware & software testing, Testing of RF components, cabinet wiring checks, conducting ESS of the LRUs, PCBs, Modules, Testing integration of subsystems.
- I have hands on experience in usage of Test Instruments like Signal Generator, Spectrum Analyzer, Pulse Generator, Network Analyzer, RF power meter, multi meter, oscilloscope etc.
- Good on experience on Verilog and knowledge of Designing with Vivado IP integration.
- Good Understanding of Microblaze and Zynq.



Project#5: Smart Farm

Client: STEMROBO Technologies Pvt Ltd, Mumbai

Tools & HDL: Arduino IDE, PROTEUS, ORCAD, Embedded Linux, Python.

Microcontroller: AT mega Microcontroller, ESP8266, Arm Processor.

Role : Working as a innovative Engineer and Responsible for making Creative, Innovative Project.

Contribution:

- Working as a innovative Engineer and Responsible for making Creative, innovative Project.
- Worked on 32-bit quad-core ARM Cortex-A72 microprocessor using Raspberry pi with different IOT Sensor.
- Worked on AVR microcontroller using Arduino with different IOT sensor.
- Making Basic Electronics, IOT Project using ESP8266, Node MCU.
- Worked on GSM and GPS Module.