

VISHAL SADANAND GAONKAR

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- Solid senior technologist with more than a decade of strong Product Development Life Cycle experience(Concept to Deployment), with an excellent **blend of Mobility, Telecom and Automotive**.
- Demonstrated expertise in research, architecture, design and end-to-end implementation of reliable software products in Mobile, Telecom, Automotive, Multimedia and Embedded-signal processing domains.
- Excellent management and communication skills.
- Excellent grasp of **Telecom Protocols**(4G LTE, VoLTE, VoIP, VoWiFi, Video, IMS) and **Native and Application Development** on Mobile Platforms(Android and Windows Mobile).
- Part of team representing Marvell on several industry Forums(CES), IOTs with Fortune 500 Clients.
- Experienced contribution across seasoned firms and startups.
- From **Concept to Production** and **Startups to Merger**, with 2 successful product mergers.
- Axelta certified **IoT** and **Cloud computing** professional.

EMPLOYMENT HISTORY

- Staff Engineer : Marvell India Pvt. Ltd. Bangalore, India : May-2007 – Till date(Various roles).
- Member Technical Staff : HCL Technologies Ltd., Bangalore, India : Aug-2003 – May-2007.
- Software Engineer : eSpark Infotech Pvt. Ltd, Bangalore, India : May-2002 – July-2003.
- Software Engineer : Skoma Corp., Bangalore, India : Feb-2002 – May-2002.

SKILLS AND ACHIEVEMENTS

TELECOM	<ul style="list-style-type: none">- Protocols and Standards: 4G LTE, IMS, VoLTE, Video over LTE, RCS 5.1/5.3, joyn Blackbird, VoIP, VoWiFi, Emergency, 3GPP, GSMA, SDP, SIP etc..- Mobile platforms/SDKs: Android(up to Android-L), Windows Mobile(up to 6) and Linux.- Native and Application development on Android and Windows mobiles.- Tools like Prolab, R&S, Agilent 8960 PXT, Protos, ACAT, Radvision, eXtreme Debugger etc...
IOT & CLOUD COMPUTING	<ul style="list-style-type: none">- Extensive knowledge on Internet of Things architectures and various Cloud computing platforms.- Axelta certified IOT professional with experience on platforms like Arduino and Axelta OSMOSIS.
IMAGING & MULTIMEDIA	<ul style="list-style-type: none">- Protocols and Standards: GSM-AMR NB/WB, G.711, G.723, G.729ab, H.263, H.264, H.265, JPEG- Multimedia framework on Android and knowledge of OpenMAX, ALSA and GStreamer.- Algorithm design in domains like Digital Image/Speech/Audio/Video/Signal Processing, Machine-Vision, Compression-Decompression, Noise Cancellation, AJB-PLC, Video Buffering etc...
AUTOMOTIVE	<ul style="list-style-type: none">- Was the Automotive Product in charge for the Japanese Automotive Region.- Imaging front-rear vision camera based driver assistance product lines, leading to product merger.- Protocols and Standards like CAN, HMI, Infotainment, Driver Assistance, FNOS etc...
TECHNOLOGIES	<ul style="list-style-type: none">- Languages : C, C++, Matlab, Assembly and the knowledge of VC++ and Java- Embedded/DSP Firmware development: TI TMS320c6x/5x, ADSP BF53x, 9S12DJ256, ARM etc...- Knowledge of Peripheral Device Drivers like CAN, SPI, SCI, EDMA, PPI, SDRAM, FLASH, I2C.- IDEs & Tools : Eclipse, CCStudio, CodeWarrior, GDB, Valgrind, Matlab, CANLoop, CANalyzer.
PROJECT COORDINATION	<ul style="list-style-type: none">- Estimations-Planning, Customer Demonstrations-Presentations, Requirements Gathering, Design and Development, Testing, Debugging, IOTs, Onsite-Offsite coordination, Reverse Engineering etc...

ACADEMICS AND PROFESSIONAL COURSES

- Bachelor of Engineering in Electronics and Communication, University of Mysore, India in 2001.
- Axelta certified Internet of Things and Cloud Computing professional.
- Advanced Diploma in Digital Signal Processing, Applications and Matlab, Cranes Varsity, Bangalore, India.
- T1C6x family system development and programming workshop, Texas Instruments, Taiwan.
- ADSP BF533 family system development and programming workshop, Kaztek Engineering, USA.
- 1Yr Internship at Texas Instruments on **Suppression of Acoustic Noise using Spectral Subtraction** [2000-2001]

MARVELL INDIA PVT. LTD. BANGALORE, INDIA

- **Various Roles Played:** Individual Contributor, Module Lead, Tech Lead / Architect, Staff Engineer.
- **OS / Tools / Languages:** Linux, Android SDK/NDK/Source, Windows Mobile Professional SDKs 5/6, Skype SDK, Eclipse, Visual Studio, C, C++, VC++.
- **Hardware :** Linux Systems, Marvell mobile, modem and tablet platforms on Android, Linux and Windows, Marvell Linux Mobile platforms like SAAR, TavorP, PXA, Littleton, Xylonite, Home Gateways, Sheeva/Pogo Plug, DPF etc..

IMS LTE Stack on Android and Linux Platforms [Aug 2009 – Jul 2010 & Jul 2011 - till date]

Abstract: Design and development of a complete IMS - LTE compliant stack for various Marvell modems and android mobile platforms, widely adopted to achieve seamless roving between cellular and IP Networks. A mature framework with rich features like Video, VoLTE, VoIP, SRVCC, Emergency, CSFB, MMTel, Conferencing plus OS abstraction for multi-platform portability.

- Currently working on RCS 5.1/5.3 & joyn Blackbird Feature Sets & Compliance for Geolocation, Auto-provisioning etc...
- Video over LTE compliance using Android native and application frameworks, comprising Video capture-render, IPC binder calls, Codec, CVO, CapNeg, Jitter buffer, Lip sync etc...
- Emergency LTE feature set with CSFB using SRVCC, AGNSS Location recovery, GML 3.0 formatting for SIP signaling.
- SDP parsing-formatting for Media grouping, MMTel Codec negotiation for Video and VoLTE features etc...
- MIME multipart encoding-decoding of various bodies for SIP signaling, call-conferencing and Emergency features etc...
- Design-Development of IMS media framework, Voice-Video Capture-Rendering, Codecs(G711, GSM-AMR NB/WB, G729ab, H.263, H.264, H.265), Voice-Video payload through IP/UDP/RTP/RTCP signaling, Media switch over CS-PS etc..
- Product Demos and IOTs for AT&T, Verizon, UBLOX, Ericsson, ALU, China Mobile, NTT DoCoMo etc...

Skype™ on Marvell Android mobile/tablet platforms [Aug 2010 - June 2011]

Abstract: Designed-developed end-to-end solution including native Audio-Video subsystems and custom user interface to achieve the Skype certifications for Marvell platforms, well before Skype was common across Android mobile platforms.

- Designed-developed the native audio-video system comprising record-playback-rendering and integrated with the encoding-decoding and the RTP framework of Skype.
- Designed-developed the UI comprising various Skype features and integrated with Skype SDK.
- Lead the Demo/Showcase as a prime product in CES 2011, well before Skype availability on Android platforms.

Image Push UE [May 2009 - Jul 2009]

Abstract: Presence-IMS based client developed for Windows and Android mobiles, used to push the Images to UEs & Home Gateways using MSRP. IMS(SIP) Server, IMS Client, UPNP/RSS client and Presence Server were running on the Home gateway Plug Computer(another milestone product from Marvell).

- Design-development of media framework and integration with IMS stack.
- Design-development of UI comprising Presence and other features.

PicoNet™ – IMS over IP & 3G on Windows and Linux mobiles [May 2007 - Apr 2009]

- **Abstract:** Same as Project-1 with IMS over WiFi and 3GPP, on Windows and Linux Mobile platforms.

HCL TECHNOLOGIES LTD. BANGALORE, INDIA

- **Role / Team size:** Individual Contributor, Module Lead, Tech Lead, Onsite Coordinator / 6 – 30
- **Tools / Languages:** Code Composer Studio, Metrowerks Codewarrior, Visual DSP++, Visual Studio, CANLoop, CANalyzer, CANOE, GENy, CANFLASH, C, C++, VC++, Assembly.
- **Hardware:** ECU using TIDSP TMS320C6414 / ADSP BF534, 9S12DJ256 & Micron MI360 SOC Camera.
- **Client :** FORD Motors, USA / Magna Electronics, MI, USA

Intelligent Headlamp Controller^R (IHC) [Aug 2003 – Dec 2005]

Abstract: Front view automotive product based on Machine Vision, developed for Magna Electronics. It controls Head lamps(Hi/Low Beam), by detecting oncoming-ongoing vehicles by differentiating automotive and Non-automotive light sources, Ambient(Day/Dusk/Night), Snow-Fog, Rain, Urban detection. Technology was further used for products like Lane Departure Warnings, Adaptive Front Lighting, Auto Cruise Control, Sign Board Recognition system, Forward Collision Warning system etc..

- Product-in-charge for the complete Japanese automotive region with clients like Mazda, Toyota, Suzuki and US-Europe clients like Ford, BMW, Audi, Volkswagen etc...
- Design-development of algorithms for Vehicle light detection, differentiating from non-automotive lights, Clustering, Ambient detection, Speed - Steering Angle hysteresis, Reflector rejection etc., with runtime algo-schedulers.
- Algorithms Porting on to T1C6414 based hardware, memory management and DSP BIOS.
- Message Handlers for Communication between DSPc6x and MS9S12 using SPI, between Micro MS9S12 and PC using SCI, between Micro MS9S12 and Vehicle network using CAN protocol.
- 15FPS frame grabber with various runtime exposure-gains, using MI360-I2C-GPIO-HPIO-EDMA.
- Demos and redesigning of the CAN drivers as per the OEMs vehicle network and ECU installations.

Auto High Beam Controller^R (AHBC) [Jan 2006 – May 2007]

Abstract: Production program of the above IHC product for Ford models D385 and E386.

Porting on BF534, frame grabber with MI360-PPI-TWI-DMA, msg-handlers for BF534 and PC using SCI, CAN Diagnostic using FNOS and testing using CANalyzer, CANOE and CANFlash.

eSPARK INFOTECH PVT. LTD. BANGALORE, INDIA

Optimization of Speech Codec G721 [Apr 2003 – Jul 2003]

Abstract: Objective was to optimize the code(both Speed & Size) and reduce the MIPS.

Optimization using C-assembly, Memory Alignment, Pragma Directives, Intrinsics, Inlines, Pipelining. Encoder MIPS was reduced from 300 to 175 and Decoder from 200 to 140 MIPS.

Digital Image and Speech Compression and Decompression [May 2002 – Mar 2003]

Abstract: Compress the image using the JPEG standards and transfer it into a bit stream and reconstruct on the receiver decoder. This was further used for a FPGA. Input speech frames into coefficients and transfer it into a bit stream using **G723.1 LPC10** and reconstruct on the receiver decoder. This was further used for a chip design.

- Involved in both code implementation and testing for various encoder and decoder block algorithms like DCT, Quantization, Run Length Coding, Bit packing etc. Implemented LPC10 algorithm and ported to C64x and involved in debugging-testing

Ms. SKOMA CORP., BANGALORE, INDIA

Interactive Projection Screens [Feb 2002 – May 2002]

Abstract: Objective was to embed mouse functionality into a wireless Laser Jet Pen where I was Responsible for the Image grabber, detection and enhancement module.