

# Santosh Ray



Contact Details	Email /phone
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**Looking For** Product Management / Software Engineering Manager role. I am keen to explore new opportunities that would help me grow professionally while contributing to success of team I work for .

## Current Role

- Embedded Software Engineer and Technical Manager with 19+ years of Industry Experience.
- Currently leading Audio and Video Customer Engineering Team with 20+ engineers worldwide.
- Technical POC for North America Automotive customers responsible to train customer on Qualcomm Audio and Video Software stack reviewing customer design, help in board bringup , provide software customization guidance and resolve issues of varied complexity from the start of the project to product launch .

## Skills

- **Operating Systems** : Windows , Ubuntu Linux , Android , QNX , AGL ( Auto grade Linux ) , Mac OS
- **Embedded OS** : Android , Posix Library, QuRT , QNX, REX ,RTKE
- **Programming Languages** : C , Python, HTML , CSS , JS (ES-6) , C++ , Java
- **IDE** : Visual C++ , VS code
- **Tools** : Trace 32 , logcat , slog2info , journalctl , Systrace , tinyalsa , ASLA utils.
- **Qualcomm tools** ; QXDM , QACT , QUTS , PCAT , QCAT
- **Frameworks** : ALSA , tinyALSA Android Framework , Django web framework
- **Qualcomm Audio framework** : Elite , AudioReach , Audio Lite , Audio
- **Qualcomm Video** : Video HAL , VPU hardware Codec,
- **3<sup>rd</sup> party Audio Framework** : DSPC Audio weaver
- **Embedded Potocols** : I2C , I2S , PCM , TDM , UART ,
- **Domain Knowledge** : Audio Signal processing , Digital Image Processing , Image and Video Compression , Video Streaming ( RTSP , MPEG DASH ) , Artificial Intelligence , Machine Learning , Operating system , Embedded systems . Data Structures and Algorithms.

## Certifications

- AI Product Manager
- Introduction to Generative AI with Google Cloud
- Building a Custom OpenAI Chatbot

- Discovering Artificial Intelligence and Machine Learning
- Discovering Generative AI
- Advanced Python Techniques
- Efficient I2C Communication and Sensor Integration
- Data Structures and Algorithms
- Python programming form AI ( Ongoing)
- Deep learning (Ongoing)

### **Key Features or Projects Worked .**

- Integrating Codecs G.723 and AMR NB into Audio Video Subsystem of 3G324M Telephony stack
- Implementation of Avatar feature during Live 3G video call .
- Implementation of Enhanced VTelS ( video Telephony feature ) where live streaming of .3gpp clip is performed during 3G Video Call
- Implementation of Sepia , Pencil sketch , Framing effect during Live Video call .
- Implementation of Incall Audio Feature in Qualcomm 6K series chipset
- Implementation of Audio camera concurrency feature in low cost Qualcomm Chipset
- Adding the support to decode /encode Audio in Core Sound driver for 6K series chipset
- Implementing various Codec profiles for handset , headset , Speaker path in Qualcomm Codecs
- Contribution in the implementation of Low power Audio playback in Android Platform
- Resolved multiple Audio issues related Slimbus on Fusion Architecture .
- Fix multiple issues and make the commercialization of MBHC feature possible for first time on Qualcomm chipset
- Fix multiple issues and make the commercialization of Dual Voice Activation feature Possible on Qualcomm chipset
- Fix multiple issues and make the commercialization of Adaptive ANC feature possible on Qualcomm Chipset
- Helped in the integration of AI based Echo cancellation Algorithm .
- Helped in porting Customer Model on to Qualcomm DSP support Embedded AI Accelerator .
- Lead the effort in the commercialization of Audio features on Mobile and Automotive Platforms.
- Ported 3<sup>rd</sup> party based algorithms in Qualcomm DSP as well as ARM .
- Customized many customer Audio Routing as per the requirement .
- Ported the A2B Stack from ADI onto GearVM ( Zephyr OS ) that does not support , dynamic memory allocation , File System operations , String functions , dynamic linking etc .

### **Customers worked with**

- SoMC, Samsung , LGE , Black Berry, QNX Software , Panasonic , Google , Xiaomi ,Huawei,General Motors, Rivian , Ford , Visteon , Bose , Arkamys , Faurecia , Clarion Peiker Acoustic , Cinterion,

### Countries Travelled for Work

- United kingdom , Sweden , Germany , Poland , China , US .

### Employment History

Employment summary (19+ years)	Work Summary
<p>Philips Software India Pvt Ltd (Now named as NXP software )</p> <p><b>Designation /s</b></p> <ul style="list-style-type: none"> <li>• <b>Software Engineer (2yrs 3months)</b></li> <li>• <b>Sr Software Engineer (3months)</b></li> </ul> <p><b>Start – End date</b></p> <p><b>July 11<sup>th</sup> 2005 - September 29<sup>th</sup> 2007</b></p>	<p>Audio and Video Codec integration in to 3G324M video telephony stack and development of Enhanced Video Telephony .</p> <p><b>Skills :</b> C , JTAG , T32 scripts, Shell Programming , Batch file , Microsoft Visual C++ .</p> <p><b>OS – Windows , RTKE</b></p> <p><b>Platform :</b> Sysol7210 hardware mobile Platform</p>
<p>Qualcomm India Pvt Ltd</p> <p><b>Designation /s</b></p> <ul style="list-style-type: none"> <li>• <b>Software Engineer ( 1yr)</b></li> <li>• <b>Sr Software Engineering (1.5 yrs )</b></li> </ul> <p><b>Start – End date</b></p> <p>October 1<sup>st</sup> 2007 - April 1st 2010</p>	<p>Working in Audio Drivers integrating Mp3, AAC , WMA codec etc and Audio Codec Programming and developing Incall Audio and Audio Camera concurrency features on low cost Qualcomm Chipsets targeted for Asia Market</p> <p><b>Skills :</b> C , JTAG , T32 scripts, Shell Programming , Batch file ,</p> <p><b>OS – BREW</b></p> <p><b>Platform :</b> Qualcomm Chipsets MSM6290, MSM6246 , MSM6270 , QSC1100 etc</p>
<p>Qualcomm UK Ltd</p> <p><b>Designation /s</b></p> <ul style="list-style-type: none"> <li>• <b>Sr Software Engineer</b></li> </ul> <p>April 6<sup>th</sup> 2010 - October 12<sup>th</sup> 2012</p>	<p>Working in commercialization of Audio and Voice Features for Qualcomm Customers in China, Japan , Europe , US .</p> <p><b>Skills :</b> C , JTAG , T32 scripts, Shell Programming , Batch file , pyhton 2.x , Java( basic)</p> <p><b>OS – Android , Linux</b></p>

	<b>Platform :</b> Qualcomm Chipsets MSM7x27 , MSM7230 , MSM8974 ,
Qualcomm Innovation Center Inc <b>Designation /s</b> <ul style="list-style-type: none"> <li>• <b>Sr Software Engineer ( 6months)</b></li> <li>• <b>Staff Software Engineer (4 .5 yrs )</b></li> <li>• <b>Sr Staff Software Engineer (2 months)</b></li> </ul> <b>Start -End date</b> October 12 <sup>th</sup> 2012 - May 2017	Working in commercialization of Audio and Voice Features for Qualcomm Customers in China, Japan , Europe , US <b>Skills :</b> C , JTAG , T32 scripts, Shell Programming , Batch file , HTML , CSS , JS , Java( basic) <b>OS –</b> Android , Linux <b>Platform :</b> Qualcomm Chipsets MSM8992 , MSM8994, MSM8210
Qualcomm Technologies Inc <b>Designation /s</b> <ul style="list-style-type: none"> <li>• <b>Sr Staff Software Engineer ( 2 yrs)</b></li> <li>• <b>Sr Staff Software Engineer/Mgr ( 5 yr +)</b></li> </ul> <b>Start -End date</b> May2017 - Present	Leading Automotive Audio CE Team , Expanding it World wide, taking responsibility of Video CE team and monitor the day to day activities of the Team .  <b>OS –</b> Android , Linux , QNX , Hypervisor <b>Platform :</b> Qualcomm Chipsets SA8155, SA6155,SA8295 ,SA8775 etc ,

#### Academic Profile

Class	School / College	Year of passing	% of Marks
M.Tech.	IIT Kharagpur	2005	9.29/10 (CGPA)
B.E.	UCE, Burla Sambalpur,Orissa	2003	82.69%
+2/Intermediate	B.J.B College, Bhubaneswar, Orissa	1999	90.9%
10 <sup>th</sup> ,ICSE	Stewart School, Cuttack, Orissa	1997	88.0%