SHASHI SHIVARAJU

linkedin.com/in/shashi-shivaraju | shonnah@g.clemson.edu | github.com/shashi-shivaraju | +1 (864)650-2553 | 220-621, Elm Street, Clemson, SC 29631-2844

EDUCATION:

Clemson University,
Master of Science in Computer Engineering, CGPA: 4.0/4.0
Holcombe Department of Electrical and Computer Engineering, Clemson University, SC. August 2017 – May 2019

Visvesvaraya Technological University,
Bachelor of Engineering in Electronics and Communication
Sir M. Visvesvaraya Institute of Technology, Bangalore, India. August 2009 – May 2013

TECHNICAL SKILLS:

Programming Language: C++, C, Python, JAVA, CUDA
Operating System: Linux, Android, Embedded Linux, iOS, Windows
Mobile Technologies: Android App Development (Java and Native), iOS App Development (swift)
Version Control Tool: Tortoise CVS, GIT
Defect Tracking Tool: Bugzilla, IBM Rational Clear Quest
Network Protocols: RTP & RTCP (RFC 3550), SRTP (RFC 3711)
Domain: VoIP (Media Engine), Linux Kernel & Driver Development, Multithreading, Mobile App Development, Computer Vision, Image Processing, AOSP (Android), GPU Programming, Socket Programming, ALSA (Linux sound) programming.

PROFESSIONAL EXPERIENCE:

Software Developer Intern, Bite Technologies, Pendleton, SC, USA — Summer 2018

Bite Counter WearOS App

- Developed a Native Application for Android's WearOS which utilizes Android's NDK API to capture watch's gyroscope data and determines the bite count during a meal in order to monitor the food intake of the user.
- Implemented the Android Client which sends the session data from the watch to a remote server using HTTP protocol if connected to network or forwards the session data to a Mobile client using Bluetooth protocol.
- Developed a companion Android Mobile application, which utilizes Bluetooth to receive data from the Bite Counter WearOS App and sends it to a remote server using HTTP protocol.
- **Technologies:** Java, C/C++, Android Wear OS, HTTP protocol, Bluetooth, Socket Programming.

Senior Software Engineer, Aricent Technologies Holdings Ltd, Bangalore, India — January 2014 – July 2017

VoLTE and RCS Solution

- Integrated HEVC software codec and developed RTP stack according to RFC: draft-ietf-payload-rtp-h265-14 for HEVC data.
- Integrated the WebRTC-AEC module with the Media Engine to reduce the effect of echo on speech quality of VOIP call.
- Involved in implementation of dynamic reconfiguration of OMX AVC decoder according to OMX IL Specification.
- Involved in implementation of SRTP stack with support for AES and DES Cipher algorithms for secured communication.
- Fine-tuned adaptive Jitter Buffer for Audio and implemented buffer drop logic at audio driver for smooth audio play out.
- Implemented a feature to set the Differentiated Services Code Point (DSCP) in the IP header of the outgoing RTP packets.
- Involved in implementation of support for CVO feature in video calling.
- Provided onsite (for NVIOT & CMCC Certifications) & offshore support in system integration and fixed the reported bugs.
- **Technologies:** C++, C, Socket Programming, Multithreading, AOSP, RTP/ RTCP and AV Codec.

Loadable Kernel Modules of AAC-LC & HE-AAC Encoders

- Designed and implemented the Linux character drivers along with kernel make files to use the AAC-LC encoder kernel module and HE-AAC encode kernel module through ioctl commands and ported the user space implementation of the codec for kernel space usage.
- **Technologies:** C, Linux Kernel & Driver Development.

Aricent Home Automation using Amazon Alexa Skills and Raspberry-Pi

- Developed an Alexa voice Skill to control an embedded device like Raspberry Pi/Android Device to control a home appliance via voice instructions. Communication between Alexa (AWS Lambda) and embedded device was achieved by using MQTT protocol for IOT.
- **Technologies:** Amazon's Alexa Skills, Python, JavaScript

ACADEMIC PROJECTS:

Computer Vision and Image Processing Algorithms — **[C/C++, Linux]**

- Developed a Win32 GUI Application in which user can load an image and semi automatically segment food items present in the image by drawing contours around the food items. Segmentation is achieved using Active Contour Algorithms.
- Developed programs to perform Image Convolution, Optical Character Recognition, Image Segmentation, Image Composition, Image Warping, Range Image Segmentation and Image Steganography.

Embedded Computing — **[C, Linux]**

- Implemented Lossless Data compression algorithms such as RLE, LZW [Lempel–Ziv–Welch] and Huffman.
- Implemented a device driver to play audio samples using SB16 sound card. The sound card was configured to play 8-bit mono channel 11025Hz sound sample data using SB16's DSP and DMA (Direct Memory Access) Controller.