SHYAM SUNDAR GULLIPALLI

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PROFESSIONAL SUMMARY

Experienced **Telecom Engineer** with **3 years and 5 months** in the industry, having worked at **Mavenir Systems Pvt Ltd** and **Capgemini Engineering**. Worked in **5G PHY layer development and testing**, including **PHY development in feature implementation and enhancement**. Proficient in executing **automated L1 test plans** using **UT, MXG, and MXA tools**, ensuring compliance with **L2/L3 stack** through **simulator and commercial UE validation**. Strong expertise in **C programming** and **3GPP Release 15**, contributing to **code optimization and performance improvements**. Passionate about **5G technology** and committed to driving innovation in **network infrastructure** through collaboration and problem-solving.

WORK EXPERIENCE

Mavenir System PVT LTD, May 2024 – Present

Member of Technical Staff

5G PHY layer(L1) feature mMIMO development on ORAN

- Enhanced development and validation of the Physical Uplink Shared Channel (PUSCH) Transport Block in C, ensuring compliance with 3GPP 5G NR standards.
- Optimized algorithms for Transport Block size calculation, and Conducted rigorous testing and debugging to validate PUSCH UL TB functionality under various channel condition and configurations.
- Implemented functionality to read and process Beam form weights from configuration files, enabling dynamic beamforming optimization in C language.
- Conducted comprehensive functional testing of the 5G NR stack, ensuring compliance with 3GPP standards and system requirements.
- Designed and Implemented Python-based automation script to streamline the execution of KW(Klocwork) static code analysis scripts, improving code quality and reducing manual efforts.
- Developed a python script to parse and display Git commit history for specific files, enabling efficient tracking of changes and debugging of issues.

Capgemini Engineering, Nov 2021 – May 2024

Associate Connectivity & NW Engineer

5G PHY layer(L1) feature development on multi-DSP core gNB platform

- Leveraging my expertise in C programming and a strong foundation in 3GPP Release 15 specifications, I have extensive experience developing and testing 5G Phy Layer
- Programmed and optimized the L1 Code Block scheduler in C using Visual Studio to achieve PHY throughput targets of 40 Mbps (UL) and 80 Mbps (DL), guided by pre-estimated PHY MIPS and UT for UL and DL MCS levels. Conducted comprehensive validation of the PHY modem using MXA, MXG, and stack L2 to ensure compliance with 3GPP specifications and seamless integration with higher network layers.
- Developed and implemented a robust UT framework to validate DL and UL channels, ensuring performance and reliability.
- Created a MATLAB-DSP target framework to test DSP target with various test cases, verifying PHY throughput coverage and SNR performance for different MCS levels as per 3GPP specifications.
- Conducted extensive end-to-end (E2E) validation using Simnovus UE, TEMS UE, and commercial UEs with target gNB, demonstrating expertise in log analysis using Wireshark FAPI, UE logs, and TEMS-INVESTIGATION software.

- Gained in-depth knowledge of E2E testing scenarios involving 2, 16, and 32 users, validating PHY throughput and comprehensively understanding 3GPP SNR and EVM requirements for link adaptation.
- Demonstrated proficiency in setup tuning and link adaptation verification for UL and DL, adhering to 3GPP specifications for 64QAM and 256QAM MCS tables.
- Utilized Keysight Signal Studio to configure DL and UL test configurations for FDD and TDD on various bandwidths (5/10/20 MHz), verifying EVM performance for different MCS levels using MXG and MXA.
- Conducted rigorous E2E validation using commercial UEs and target gNB, employing TEMS-INVESTIGATION software for comprehensive DL log analysis to identify and resolve performance issues.
- Identified failure and pass regions in UL and DL, validated E2E link stability by expertly tuning setup parameters, and gained in-depth knowledge of stabilizing unstable PHY throughput conditions, playing a crucial role in validating the 5G PHY Modem software.

INTERNSHIP

Telecom trainee, BSNL **Visakhapatanam**

Participated in course curriculum event which was held by BSNL for one month and learned basics of Telecomm services.

PERSONAL PROJECTS

Endometrial Cancer Histopathological Image Classification based on Convolution Neural Networks.

(02/2021 - 08/2021)

- The main objective of this project is to assist the pathology department in the early and accurate evaluation of histopathological images.
- Detects cancer patients and cautions them for treatment.

SKILLS

- **Technical Skills:** 5G PHY Layer Development, C Programming, 3GPP Release 15 Specifications, MIMO, ORAN, Git, Telecommunication, Log Analysis, basic python.
- **Testing Tools and Frameworks:** UT framework, Keysight Signal Studio, MXG and MXA, Wireshark, TEMS-INVESTIGATION.
- **Soft Skills:** Analytical Thinking, Problem-Solving, Attention to Detail, Teamwork, Communication, Time Management.

CERTIFICATION

- Completed certified **C Programming For Beginners-Master the C language** course in Udemy.
- Completed certified **5GNR(New Radio) Technical Training- A Deep Dive** course in Udemy.

EDUCATION

Bachelor of Technology, GMR Institute of Technology Rajam, **May 2018-2021**

Completed full-time bachelor's degree in Electronics and Communication Engineering branch.

Diploma, Andhra Polytechnic Kakinada, **March 2015-2018**

Completed 3 years of Diploma in Electronics and Communication Engineering branch.

AWARDS

WoW Award, Capgemini Engineering

Appreciation for the great work and perseverance, relentless follow-ups, shown in the L1 phy App project. And for testing in Simnovus and TEMS added great value for our project and team.

LANGUAGES

- **English**
- **Telugu**