

KIRANA KUMARA G S

Email: kirankgowda285@gmail.com | Phone Number: [+918747955167](tel:+918747955167) | LinkedIn: [Kirana Kumara G S](#)

CAREER OBJECTIVE

Motivated and detail-oriented fresher with a strong foundation in embedded systems, including microcontroller programming, real-time systems, and hardware interfacing. Eager to contribute and grow in a dynamic environment, leveraging academic knowledge and a passion for innovation. I am enthusiastic about utilizing my interdisciplinary skill set to develop efficient, cutting-edge solutions in embedded technology.

WORK EXPERIENCE

Embedded System Design & Automotive Technologies

Emertxe Information Technologies (P) Ltd | May 2024 – December 2024

- Successfully completed specialized training in Embedded Systems Design and Automotive Technologies.

Test Engineer

Xiaomi India | March 2022 – March 2023

- Worked as a Test Engineer, contributing to the testing and quality assurance of mobile devices.
 - Conducted thorough testing, identified bugs, and collaborated with development teams to improve product performance.
-

TECHNICAL SKILLS

Programming Languages:

- Proficient in Advanced C programming and Java
- Basic knowledge of Python
- Object-Oriented Programming (OOP) using C++
- Strong understanding of Data Structures

Embedded Controllers:

- Hands-on experience with GPIOs, Analog I/Os, memory management, interfacing, and character LCDs
- Practical use of peripherals such as Timers, Counters, and Interrupts
- Experienced in communication protocols including UART, SPI, I2C, and CAN

Embedded Platforms:

- Familiar with Linux distributions (Ubuntu)
- Experienced with PIC microcontroller (18F4580) board

Development Environment and Tools:

- Proficient in Vim, Makefiles, and MPLAB-X IDE (version 6.15, latest)
 - Familiar with compilers such as GCC and XC8
-

EDUCATION

- Bachelor of Engineering (B.E.) in Electronics and Communication Engineering (ECE)
Cauvery Institute of Technology, Mandya | CGPA: 6.54
- Diploma in Electronics and Communication Engineering (ECE)
Government Polytechnic College, K.R. Pete | Percentage: 64.88%
- Class X
Grama Bharathi High School, K.R. Pete | Percentage: 70.24%

PROJECTS AT EMERTXE

Project Number: 1

Title	IMAGE STEGANOGRAPHY USING LSB ENCODING AND DECODING
Project brief	The objective was to send a secret text file encoded inside an image of bmp file format. Encoded the length of the secret text and then encoded the data into the LSB of the image bytes. The decoding process involves decoding the length and then decoding the text bit by bit. The final output is the secret text after decoding.
Technologies used	Advanced C – File operations, Pointers, Bitwise operations, Functions, Makefiles, Command line arguments
Key challenges & Learnings	<ul style="list-style-type: none">❑ Understanding of pixels and header of image file by doing literature study✓ Transforming the embedded information to the destination without changing properties of original image✓ Faced challenges while doing bitwise manipulation of data to embed as well to retrieve the data from the destination image which was solved by self-understanding

Project Number: 2

Title	INVERTED SEARCH
Project brief	An inverted index maps content (like words) to their locations within a document or database, enabling fast full-text searches. It's widely used in search engines despite the increased processing needed when adding documents. This project focuses on implementing an inverted search using hash algorithms.
Technologies used	Advanced C – Hashing, Single linked list, File Handling, Dynamic memory allocation, Linked lists
Key challenges & Learnings	<ul style="list-style-type: none">❑ Recognizing and indexing words across multiple documents while managing memory efficiently, especially when handling large datasets.✓ Managing large disk files during indexing and sorting, where memory and time constraints can become significant challenges.✓ Ensuring fast and accurate query responses by efficiently retrieving and ranking documents based on word frequency and proximity, which requires careful design of the querying mechanism.

Project Number: 3

Title	ADDRESS BOOK
Project brief	Address Book is a small application written in C language. It keeps track of names and telephone/mobile numbers and e-mail addresses. It is a console-based application which uses standard I/O for adding and deleting contact names, phone numbers and e-mail addresses, searching names and associated numbers and email addresses, updating numbers and email addresses, and deleting contacts.
Technologies used	Advanced C, Function pointers, File I/O handling
Key challenges & Learnings	<ul style="list-style-type: none">❑ Managing contacts without advanced data structures, using only file operations, can be tricky for search, edit, and delete functions.✓ Ensuring user inputs like names, phone numbers, and email addresses are correctly formatted and valid is essential.✓ Handling file I/O for saving and retrieving contacts while preventing data loss or corruption is a major challenge.✓ Structuring the code for clean, reusable, and maintainable modules is crucial for a scalable application.

Project Number 4

Title	Car Block Box
Project brief	<p>The project aims to design an advanced car black box system that records vital data during vehicle operation. This system will enhance road safety, assist in accident analysis, and provide crucial information for insurance claims and legal investigations, improving accountability.</p> <p>The goal of this project is to implement core functionalities of a car blackbox in a PIC based micro-controller supported by rich peripherals. Events will be logged in EEPROM in this project. This project can be further extended to any vehicle.</p>
Technologies used	PIC micro-controller and schematics, peripheral handling by understanding data-sheet, Interrupt handling.
Key challenges & Learnings	<ul style="list-style-type: none">✓ Understanding PIC microcontrollers.✓ Learnt about interfacing other peripherals with controller.✓ Leant about UART, I2C communication protocols.✓ Implemented RTC.✓ Writing in EEPROM and reading was a bit challenging.

Project Number 5

Title	Mini Shell
Project brief	<p>The Mini shell project involves the development of a lightweight, command-line shell using the C programming language. It simulates basic Linux shell functionalities, including processing user input, executing commands, and supporting file redirection and pipes. The focus of this project is to enhance practical knowledge of system calls, process management, string manipulation, and Unix-based principles, providing a hands-on experience of building a simple shell from scratch.</p>
Technologies used	C programming language, System calls, Process management, String manipulation, Unix shell concepts, File redirection, and pipes.
Key challenges & Learnings	<ul style="list-style-type: none">✓ Gained in-depth understanding of system calls and process handling in Unix/Linux.✓ Learned how to implement file redirection and piping between commands.✓ Developed hands-on experience in string manipulation and parsing user inputs.✓ Overcame challenges related to managing child processes and executing commands effectively.✓ Worked with process forking and executing system commands through the shell.

COMPANY PROJECTS

Title	Xiaomi Phones
Project brief	<ul style="list-style-type: none">• Gather the requirements for the Mobile Power Testing to start of the project and discuss with the team about the features and development plan.• Write the test cases for the features and execute them in all platforms.• Test for functionality, compatibility, integration in the project.• Reporting the defects on Jira and tracking them for the fixes and closing the features as per the Sprint milestones.• Perform Smoke, Sanity and Regression for every new feature developed.

Tools/Software's used	JIRA Tool
Key challenges & Learnings	<ul style="list-style-type: none"> ☐ 1 year of experience in Manual Testing. ✓ Good knowledge in SDLC, STLC and Bug Life Cycle. ✓ Expertise in Functional Testing, Regression Testing, Ad-hoc Testing, Smoke Testing and Sanity Testing. ✓ Experience in Agile methodology. ✓ Experience in Defect Reporting & Defect verification using defect tracking tools JIRA. ✓ Experience in Testing Functionality on MIUI OS And Android Devices. ✓ Experience in Power and Thermal Validation and Verification of Mobile Device ✓ Good Understanding of Android Platform, Android Architecture ✓ Perform Power Configuration Test For Both Qualcomm and Media Tek Chipset ✓ Experience in JIRA Management Including Raising and Tracking JIRAs found from Regular Test ✓ Collaborate with R&D Engineers to analyze and optimize power consumption issues within the DEADLINE ✓ Perform Power Measurement test using the "Monsoon Power Monitor Tool" to verify ✓ Power consumption of the device for various functions related to modem, display/video, WLAN/BT/GPS, Audio, Camera, Standby and Wakelock ✓ Individually handled multiple projects and signed off without any defects.

ACADEMIC PROJECT

Title	SMART WATCH FOR HEALTH ASSISTANCE
Project brief	<p>For my final year BE project, I developed a Smart Watch for Health Assistance. The primary goal of this project was to design a system that continuously monitors the user's health and provides emergency assistance when necessary, ensuring the user's safety in critical situations.</p>

Declaration:

I hereby declare that the above furnished information is true and correct to the best of my knowledge

Place: BANGALORE

Kiran Kumar G.S