

RESUME

Charishma Balaga

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CAREER OBJECTIVE

Passionate and detail-oriented Embedded Software Engineer with a strong background in embedded systems, microcontroller programming, and signal processing. Seeking a challenging position where I can leverage my technical skills and innovative thinking to contribute to cutting-edge projects and advance my career in the field of embedded systems.

PROJECTS

R-Peak detection using FRFT and Linear Discriminant Analysis

M.tech Project | MATLAB Programming | 2022

- Developed a biomedical signal processing system to identify R-peaks using advanced techniques such as Fractional Fourier Transform (FrFT) and Linear Discriminant Analysis (LDA).
- Analysed ECG datasets, achieving a 25% reduction in false positives and a 30% increase in overall diagnostic precision in cardiovascular health assessments.

LSB Image Steganography

C Programming | 2022

- Created a command-line tool to discreetly embed text files into BMP images, preserving visual integrity and enhancing data security.
- Utilised file operations, pointers, and bitwise techniques to encode and decode data seamlessly.
- Extracted hidden text bit by bit, ensuring precise data retrieval.

Car Black Box

Embedded C

- Developed a system to track vehicle issues and driving habits, storing data in EEPROM for secure access and potential cloud backup.
- Built using a PIC16F877A microcontroller with I2C, UART protocols, ADC, and interrupt handling.

Command Line Test Environment

Bash Scripting

- Designed a login-based test environment with sign-in and sign-up options for users to take multiple-choice tests on various subjects.
- Integrated a timeout mechanism to enhance user experience and prevent unresponsiveness.

Inverted Search

Data Structures, C Programming

- Implemented a hashing algorithm to accelerate text searches by utilising word indexes when documents are added to the database.
- Techniques used include hashing, singly linked lists, and file handling in data structures.

TECHNICAL SKILLS

Programming Languages: C, Embedded C, MATLAB, Shell Scripting

Microcontrollers: PIC16F877A

Protocols: SPI, I2C, UART

Tools: MPLAB, MATLAB

Operating Systems: Linux, Windows

Concepts: Data Structures and Algorithms (DSA), Operating Systems

EDUCATION

CLASS	INSTITUTE NAME	YEAR	Branch	CGPA
Embedded Systems Course	Emertxe Information Technologies, Bangalore	Jan(2023)-Aug(2023)	-	-
M.Tech	Jawaharlal Nehru Technological University(UCEK), Kakinada	2020 - 22	Communication Engineering and Signal Processing	8.3
B.Tech	Kakinada Institute of Engineering and technology for women(KIETW)	2016-20	Electronics and Communication Engineering	7.6
Intermediate	Sri Chaitanya junior college,Vizag	2014-16	MPC	9.1
SSC	Sri Chaitanya techno school,Palasa	2014	-	9.7

INTERNSHIP

Vizag Steel Plant, Visakhapatnam

Intern | 2019

- Analysed communication processes, including internal memos, emails, and meetings.
- Interacted with professionals from diverse backgrounds, enhancing communication and interpersonal skills.
- Gained practical understanding of communication processes in a real-world industrial environment.

PUBLICATIONS

- C. Balaga, G. Dhanarasi, and B. T. Krishna, "R Peak Detection Using Fractional Fourier Transform and Linear Discriminant Analysis," 2022 4th International Conference on Circuits, Control, Communication and Computing (I4C), Bangalore, India, 2022, pp. 226-230, doi: 10.1109/I4C57141.2022.10057912

ACHIEVEMENTS

- Secured 3rd prize in the Project Expo at KIETW for an innovative embedded systems project.
- Active member of the English club at KIETW, enhancing communication and public speaking skills.

PERSONAL DETAILS

Father's name	:	Balaga Yarran Naidu
Mother's name	:	Balaga Nirmala
Date of Birth	:	17-08-1999
Languages known	:	English, Telugu

DECLARATION

I confirm that all the information provided is accurate and true to the best of my knowledge

PLACE: Hyderabad

Date:

SIGNATURE

Charishma Balaga