NAME OF THE STUDENT

|  |  |  |
| --- | --- | --- |
| **CAREER OBJECTIVE** |  | A brief about what an individual want to do in his/her career. An example can be: *Looking for a challenging and responsible opportunity, explore strengths and potentials and to gain experience from a professional organization to meet employer expectations and to continually develop my technical skills in the field of embedded systems with a view to join a team of professionals and to work with a progressive company for a long and rewarding career.* |
| **WORK EXPERIENCE** |  | * Currently undergoing hands-on technical training program – **Advanced Embedded Systems Course** at Emertxe Information Technologies ([http://www.emertxe.com](http://www.emertxe.com/)), Bangalore
* This course is Government of India certified program, aligned with **Skill India** / NSDC under Electronics Sector Skill Council of India (<http://www.essc-india.org>) - **Embedded Software Engineer QP ELE /Q1501**
* *<Mention previous internship/work experience, if any>*
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| **TECHNICAL SKILLS**  |  | * Programming Languages:
	+ Shell scripting
	+ Advanced C programming
	+ OOP using C++
	+ Data structures
* System programming:
	+ Linux Kernel system calls
	+ IPC mechanisms – Pipe, FIFO, Shared memory
	+ Network Programming using TCP and UDP sockets
	+ pThreads – Multi thread programming
* Embedded Linux:
	+ U-boot, cross compiling, porting Linux kernel
	+ Linux bring-up on Emertxe ARM board
* Embedded controllers:
	+ Hands-on working with GPIOs, Analog I/Os, Memory usage, interfacing, character LCD
	+ Peripherals usage - Timers, Counters and Interrupts
	+ Communication protocols - UART, SPI, I2C etc
* Qt Programming:
	+ Qt code and utility classes
	+ Developing UI using widgets and designer
	+ Design patterns
	+ Multi-threading using Qt
	+ Qt build system and Debugging
* Embedded platforms:
	+ Distributions - Linux (Fedora / Ubuntu)
	+ BeagleBone Black (ARM Cortex A8)
	+ PIC (18F4520) board
* Development environment and tools:
	+ Dev environment: Vim, Makefiles, MPLAB, Qt Creator
	+ Compilers: GCC, XC8, ARM-Linux-gcc
	+ Debuggers: GDB

*<Mention additional skills, if any>* |
| **COURSE WORK** |  | * Microprocessor
* Digital Electronic
* Digital signal processing
* *<Mention course-work that are related to Embedded systems>*
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| **PERSONAL ATTRIBUTES** |   | Some key personal attributes that an individual stands for. Must be really honest. An example can be: * *Quick learning of new initiatives*
* *Ability to meet deadlines through effective time management*
* *Ability to work effectively under pressure*
* *Maintaining healthy interpersonal relationships with team*
* *Team player with work ethics, committed to work hard and sincere*
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| **EDUCATION** |  | *<Start with highest degree to lowest, in the following format>*MTech (Embedded Systems Design), VTU, 81%, 2015-2017B.E (ECE), Anna University, 72%, 2011-2015Class – XII, CBSE, 85%, 2011Class – X, CBSE, 80%, 2009 |
| **CONTRIBUTIONS AND ACHEIVEMENTS** |  | *<Call out paper presentations, awards won etc...>** Chairman of IEEE association in the college for a period of 1 year (2013 – 2014).
* Received Student Enterprise Award, an International Award given to best projects with a cash prize of $1500.
* Received the Best Outgoing Student award of the Institution for the 2010 – 2014 batch.
* 1st place in paper presentation contest at TJS engineering college, Gojan School of business and technology and MGR University.
* Received Star Award for Outstanding Contribution to Special Projects at Hewitt Associates.
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| **PERSONAL INTERESTS** |  | *<Call out your hobbies, ensure they are specific, not generic ones>* |
| **CERTIFICATIONS AND IN-PLANT TRAININGS** |  | *<Call out trainings & other courses attended…>** Underwent In-Plant Training at Indian Telephone Industries, Bangalore.
* In-Plant Training at BSNL, Chennai.
* In-Plant Training at HCL, Chennai.
* Honors Diploma in Computer Application certification at CSC
* British English Certificate – Preliminary Level
* Training in Embedded Systems & Linux Networking
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# **PROJECTS AT EMERTXE**

*<Create individual entries for each projects, include academic projects as well, A sample is provided as follows>*

|  |  |
| --- | --- |
| 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 | Embedded C – File operations, Pointers, Bitwise operations, Functions, Makefiles, Command line arguments  |
| Key challenges & Learnings  | * 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
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|  |  |
| --- | --- |
| Project number:2 |  |
| Title | IEEE 1284.4 protocol (DOT4 specification) |
| Project brief | The IEEE 1284.4 is a transport protocol that is used to exchange data between the device and host machine. This protocol maintains all services that the printer supports |
| Technologies used | Advanced C – Function pointers, Dynamic memory allocation, String manipulation, Linked lists |
| Key challenges & Learnings  | * Implementation of string manipulation like pattern matching using library functions. Faced challenges during using right set of parameters
* During linked list implementation faced multiple challenges using the free() function usage
* Function pointer declaration and assigning right address was a challenge, faced multiple segmentation faults using the same.
 |

|  |  |
| --- | --- |
| Project number:3 |  |
| Title | Multi Server Relay Agent |
| Project brief | This is a project based on providing services to the clients from the multiple servers indirectly through the help of a third party i.e. Relay Agent. In this project we worked on multi-server, multi-client scenario using TCP sockets.  |
| Technologies used | Advanced C, Data Structures & Algorithms, Linux Kernel System Calls and Socket Programming (TCP sockets), Network daemons in Linux  |
| Key challenges & Learnings  | * It was a team project and my responsibility was to handle the servers so the main challenge was to make a concurrent server. This was solved by group discussions and reading the man pages by appropriate usage of fork()
* The main problem was to demonize the server, given the server executable. This was resolved by literature study and discussing with mentors. Leant about making a normal executable program into a daemon process.
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# **ACADEMIC PROJECTS**

|  |  |
| --- | --- |
| Title | Car Security System using face detection and recognition |
| Project brief | The image of a person trying to access the car is captured and is processed using PCA (Principal Component Analysis) Algorithm. The recognition process is done by comparing the current face image to those of the known individuals in a facial database and notifies the owner |
| Technologies used | MATLAB, Arduino IDE |
| Key challenges & Learnings  | * Implementation of Viola and Jones algorithm for face detection. This involved self-study of algorithm, implementation and debugging issues
* During creation of database faced multiple challenges due to changes in background lighting conditions and implemented DCT algorithm in order to resolve the issue
* Interfacing with GPS module was a challenge, faced multiple faults during recognition process. This was resolved by understanding Arduino data-sheets & command line troubleshooting of GPS module
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# **WORK EXPERIENCE / INTERNSHIP PROJECTS**

|  |  |
| --- | --- |
| Title | APPLICATION TO MEASURE THE ABSOLUTE THRESHOLD OF HEARING BY BEKESKY'S ADAPTIVE TRACKING METHOD |
| Project brief | A logarithmic sine sweep in the frequency range of human hearing is generated and with the aim of measuring the absolute threshold of a users hearing. Amplitude adjustment of the signal is made available to the users. |
| Technologies used | LabView  |
| Key challenges & Learning  | * Generation of a sine wave sweep from 20Hz to 20Khz
* A dedicated button to increase or decrease the amplitude (+/-8dB per sec)
* To make the sweep duration user adjustable & splitting the channels.
* Calibration to adapt the sound card volume to the earphones.
* Develop a graphical user interface for the user and the report generator based on the user choice
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