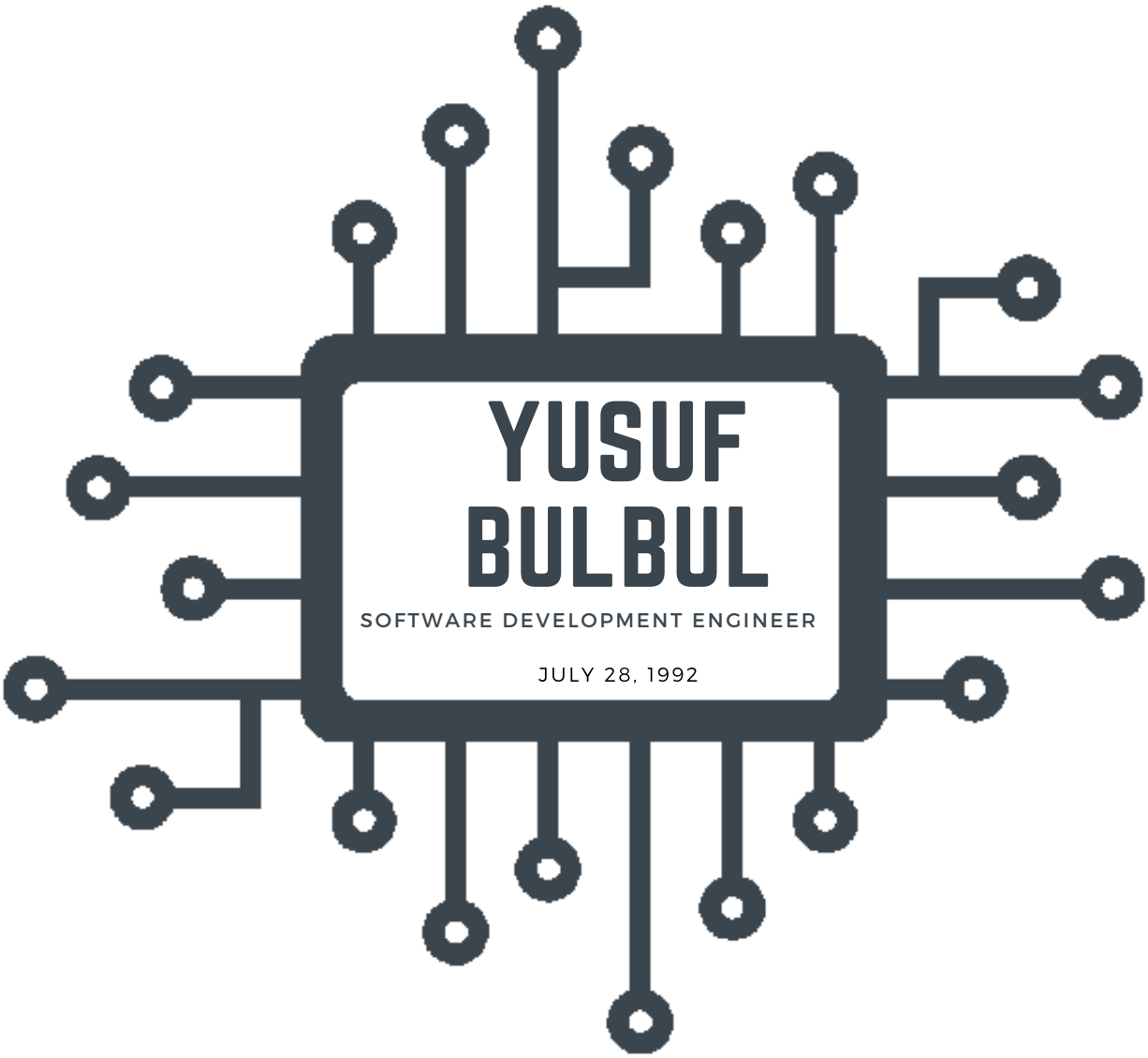
YUSUF
BULBUL
SOFTWARE DEVELOPMENT ENGINEER
JULY 28, 1992

Hello,

My name is Yusuf Bülbül. I develop embedded C / C ++ software. I have approximately 6 years experience in this field. I am currently working as an Software Development Engineer at Verifone Inc. I am very happy to be part of a development team. Here, we are developing and maintainig the banking applications on POS terminals. These applications are writen on embedded Linux systems with C and C++. Before of this company, I was playing role as Embedded Software Engineer in Hyperion Tech. We was developing a device called FSO (Free Space Optic). FSO devices are basically a kind of router used in 4G and 5G networks. This router transfers internet packets via laser beam. The device we developed includes both Linux kernel level (low-level C) and Linux user space level (C++) software. The indoor and outdoor tests are currently being performed. For more information about the device, please visit the web page.(www.hyperiontechs.com)

Also, I developed Mac(Medium Access Control) Software for Lifi(Light - Fidelity) based communication devices. This Software are using 802.15.13 Optical Wireless Network Standart published by IEEE. And It is controlling the network with Slotted Aloha and Reservation Channel Access Mechanisms. I published a conference paper about analysing and optimi zing of that standard Software. Also, my master thesis was related with this subject. Besides, while I was doing a master's degree, I was taking lessons that are relevant to my area of technical development.

I worked with software teams in previous companies. So I used software like Jira and Scrum. I know what it's like to work in harmony with the software team. In this way, I was informed about software design patterns, C ++ standards and program writing rules. At the same time, I have knowledge about software security from the companies I have worked with before and from the courses I have taken at the graduate level.

I can find beauty and fascination in nearly anything. Imaginative and open-minded, I am not afraid to venture beyond my comfort zones in search of new ideas, experiences, and adventures.When something captures my imagination and inspires, I want to share it with anyone who will listen. And I am just as eager to hear other people’s ideas and opinions even if those thoughts are wildly different from mine. Also I brim with things to say, but I can be caring listeners as well. This gives me a nearly unmatched ability to have positive and enjoyable conversations with all sorts of people even people who aren’t particularly sociable or agreeable.

# YUSUF BULBUL

SOFTWARE DEVELOPMENT ENGINEER

JULY 28, 1992

## PROFILE

- professional ethic
- MSc background and academic knowledge
- life principles defined with engineering discipline
- work experience at embedded system programming, linux systems and logic design

## CONTACT


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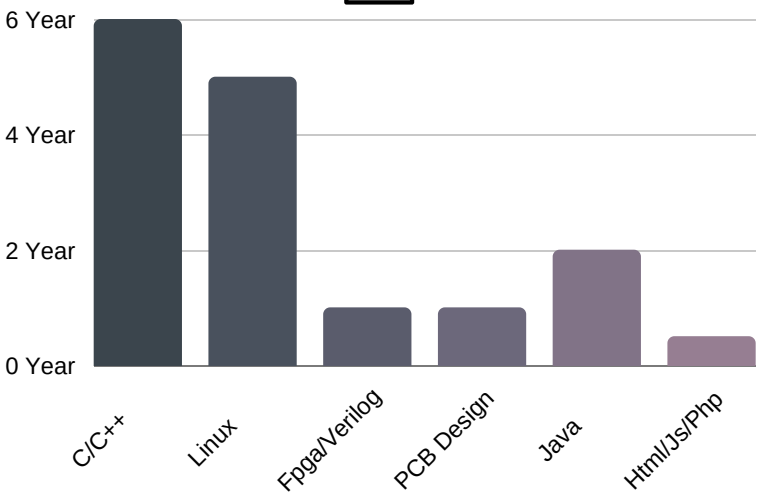
ISTANBUL/TURKEY

WWW.YUSUFBULBUL.COM

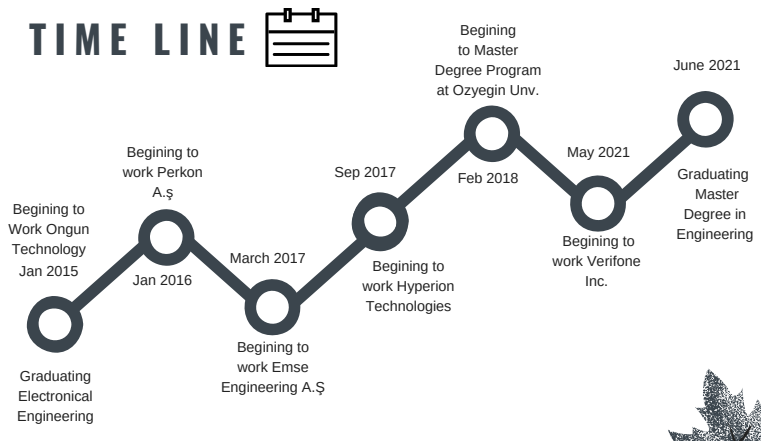

## EXPERIENCE




## SKILLS

- Programming ●●●●●
- Hardware Design ●●●
- Graphic Design ●●
- Research/Development ●●●●
- Documentation ●●●

## TIME LINE



# WORKING HISTORY

## VERIFONE INC. | MAY 2021 – PRESENT

***About Company***

Verifone is one of the world's largest POS terminal vendors and a leading provider of payment and commerce solutions. They operate in more than 150 countries and employ nearly 6,000 people globally. Their steady growth has come organically, through a dedication to innovation and strategic partnerships, as well as from savvy acquisitions.

***Projects***

Banking Applications on POS Terminals

### *Title : Software Development Engineer*

- Working on banking applications on POS terminals.
- Developing C/C++ applications for embedded system based ARM
- Working on EMV Card Processing standards which is used for banking applications.
- Fixing bugs on applications and releasing to field.

## HYPERION TECHNOLOGIES | SEP 2017 – MAY 2021

***About Company***

Hyperion Techologies is a a high-tech start-up company specialized in small cell backhaul solutions. It was founded in 2017 as a spin-off from the Center of Excellence in Optical Wireless Communication Technologies (OKATEM) at Ozyegin University.

***Projects***

FSO(Free Space Optics), Mac layer Software Implementation, LiFi Setup for Research Development

### *Title : Embedded Software Engineer*

- Worked on Li-Fi Technology implementation with embedded systems
- Developed C/C++ libraries on linux and drivers for Linux-Kernel
- Developed C programs on STM32F7XX Cortex M4 ARM MicroController with Free-RTOS(Real Time Operating System)
- Worked On FSO(Free Space Optics) Systems and Mac Layer Software
- Worked on dynamic router links with FSO and LiFi Technology

## EMSE ENGINEERING | MAR 2017 – SEP 2017

***About Company***

Emse Engineering is an medium scale industrial company in the Ankara/Turkey. Its main focus is the ticket kiosks for airways. But It works also some innovative projects like KEC Devices. It has approximataly 40 personal.

***Projects***

KEC( Card Acces Device), Ticket Kiosk for Turkish Airlines.

### *Title : Embedded Software Engineer*

- Worked on RSA, AES and DES block data-encryption-decryption processes.
- Worked on Smard Cards and its Readers with AKIS (Smart Card Operating System)
- Developed Linux and Windows Desktop Application at QT C++ Platform and Eclipse.
- Developed KEC(Kimlik Kartı Erişim Cihazı) Project on ARM Linux-Debian
- Worked on Common Criteria Security Standarts and Implementations.

## PERKON A.Ş | JUN 2016 – MAY 2017

***About Company***

PERKON, which is one of the leading companies in Automatic Identification and Data Collection (OT / VT) sector in Turkey, also known as "Barcode Systems", started its operations in 1997. Also It has cash register machine project with partnership of Digi(Japon) Company.

***Projects***

Cash Register Machine

### *Title : Embedded Software Engineer*

- Worked on Fiscal Module and Electronic Journal (Protected and Hidden Flash Memories) of Cash Register Machine.
- Tested and debugged software of Cash Register Machine with high security and international standarts.
- Worked on MSP430 Microcontrollers and its embedded artchitecture.
- Gained experience on C/C++ Development at Code Composer Studio, Keil and PIC C
- Worked on Linux Systems, kernel modules and Systems based on Debian.

# WORKING HISTORY

## ONGUN TECHNOLOGIES | JAN 2015 – AUG 2015

***About Company***

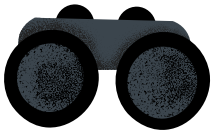
Ongun Technology is a one man startup company in the İstanbul Teknopark. It works on ERP programs.

***Projects***

Production Tracking System

### *Title : Embedded Software Engineer*

- Developed a Production Tracking System based on RFID for a Foundry
- Gained experience on C/C++ development on PIC and ST microcontrollers
- Gained experience on C# and Java development
- Worked with Linux platforms



# PROJECTS

## BANKING APPLICATIONS ON POS TERMINALS

Point of sale apps (POS) are the place in a store or elsewhere where the actual business transaction takes place. Usually, it involves an exchange of money, whether cash, check, or credit card for merchandise or a service. Payment is taken and a receipt is given. Point of sale systems make it all happen, linking hardware, such as a cash register or credit card reader, with software that will process credit and debit card payments; managing inventory; tracking sales data, and collecting customer information. Many POS systems will even sync with accounting software, creating a complete financial management package for your operation.

I usually fix bugs comes from field on banking applications which is writen in C and C++. Sometimes, I develop extra features wanted from Bank.

## MAC(MEDIUM ACCESS CONTROL) SOFTWARE

MAC is sub layer is the layer that controls the hardware responsible for interaction with the wired, optical or wireless transmission medium. The MAC sub layer and the logical link control (LLC) sub layer together make up the data link layer. Within the data link layer, the LLC provides flow control and multiplexing for the logical link (i.e. EtherType, 802.1Q VLAN tag etc), while the MAC provides flow control and multiplexing for the transmission medium.

I have developed the Mac Layer Software that implements 802.15.13 Optical Wireless Standart that developing by IEEE. I have used C language for developing that software and FreeRTOS(Real Time Operating System) to implement on SoC ARM A9 Chip.

## FSO (FREE SPACE OPTICS)

Free space optic (FSO) communication is a line-of-sight technology that uses infrared (IR) light through the atmosphere to provide wireless connectivity between two points. In comparison to radio frequency (RF) counterparts, the FSO link has a very high optical bandwidth available, allowing much higher data rates on the order of Gigabits per second (Gbps). Since FSO systems use very narrow laser beams, the resulting spatial confinement provides a high reuse factor and an inherent security. Furthermore, their deployment does not require license fees since they operate in the IR optical band which is unregulated worldwide.

I have used to Embedded Linux board with Debian distro for this project. The project has 3 piece software. I have developed kernel drivers for Debian in C Language. Also, In User Space, There is 2 piece software that I developed with C++.

## LIFI SETUP

Visible light communication (VLC), also known as LiFi, is the utilisation of light as a means of data transmission, providing both lighting and high speed wireless access. VLC technology effectively converts every LED light bulb into a wireless access point.

In this project, I have developed C++ software on Embedded Linux Board that transfer data real time from one LiFi spot to another one.

## CARD ACCESS DEVICE(KEC) PROJECT

This system performs authentication feature while a public service is served to a citizen via electronic certificates.By this way, the system verifies whether the citizen and person who attends or serves the service are the ones that are declared to be. Card Access Device (CAD) is one of the terminal devices of the EAS. It provides services over electronic media, in order to verify that the identity card (ID card) was issued by the authorized institution and the card really belongs to the cardholder.

I have developed C++ software doing all cryptologic operations on Debian Linux. Also, I have developed C language software that is storing some critical info on MCU (msp430 arm based)

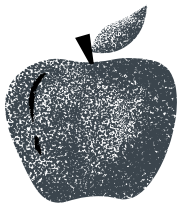
## CASH REGISTER MACHINE PROJECT

A cash register is a mechanical or electronic device for registering and calculating transactions at a point of sale. It is usually attached to a drawer for storing cash and other valuables. The cash register is also usually attached to a printer, that can print out receipts for record keeping purposes. The fiscal Module of Cash register machines records of Z Reports(fiscal Receipt) of sales. This memory must be secure and protected. And Electronic Journal is used for saving all fiscal and nonfiscal receipts. Also this memory must be secure.

Actually this project was very similar with Card Acces Device Project. I have developed C and C++ software by using Debin Os and 32 bit Arm MCU


## PRODUCTION TRACKING SYSTEM BASED ON RFID

RFID(Radio Frequency Identıty) has been used to follow the jobs and production steps through RFID Tags. The project consist of %80 software part. C#, PHP programming Languages and MSQL Database Management System has been used in this project. Therefore, Every process can be followed in a computer via the interface program and web terminal. The PCB's of rfid readers have been designed on Altium Designer. Also, Program of RFID readers which has STM32F4 microcontrollers, has been writen with C on Keil IDE



## EDUCATION

### OZYEGİN UNIVERSITY | 2018 – 2021

Master's degree Program in Electrical and Electronics Engineering

***Master Thesis: 802.15.13 MAC Performance Analysis* and Optimization**

802.15.13 Mac layer uses the Dynamic Time Slot Allocation and Slotted Aloha Channel Access mechanisms at the same time. The purpose of this thesis is to examine the dynamic slot allocation performance and optimize the time slot duration according to simulation results.

You can reach my conference paper from this link.

You can reach my master thesis from this link.

Courses which are taken in Master Degree;

- Advance C++
- Digital Design and FPGA Programming
- Distributed Systems And Cloud
- Security of Networks
- Image Processing
- Network Entertainment
- Wireless Communication

### UNIVERSITY OF GAZİANTEP | 2010 – 2015

Bachelor's degree in Electrical and Electronics Engineering

***Graduation Project: Bomb Disposal Robot***

A bomb disposal robot is a remote control device which has a robotic arm and chassis. A cam can replaced on robotic arm. Therefore, the robot provide to make analysis in dangerous areas.

Pic micro-controller has been used for its control system and developed its software with C language on Pic C. Electronic card(PCB) designs have been made on Proteus. Also Matlab simulink has been used for dynamical simulation.

Multiple Chosen Courses which are taken in Bachelor Degree;

- Programmable Logic Controllers
- Digital Filters
- Automatic Control Systems 2
- Digital Design 2
- Digital Computers ans Symbolic Programming
- Computer Architecture