Cyprus International University

Faculty of engineering
Department of Software Engineering
2021-2022 Spring semester

Masked Face Recognition System (MFR)
Report 3

Project Supervisor
Assist. Prof. Dr. Parvaneh ESMAİLİ

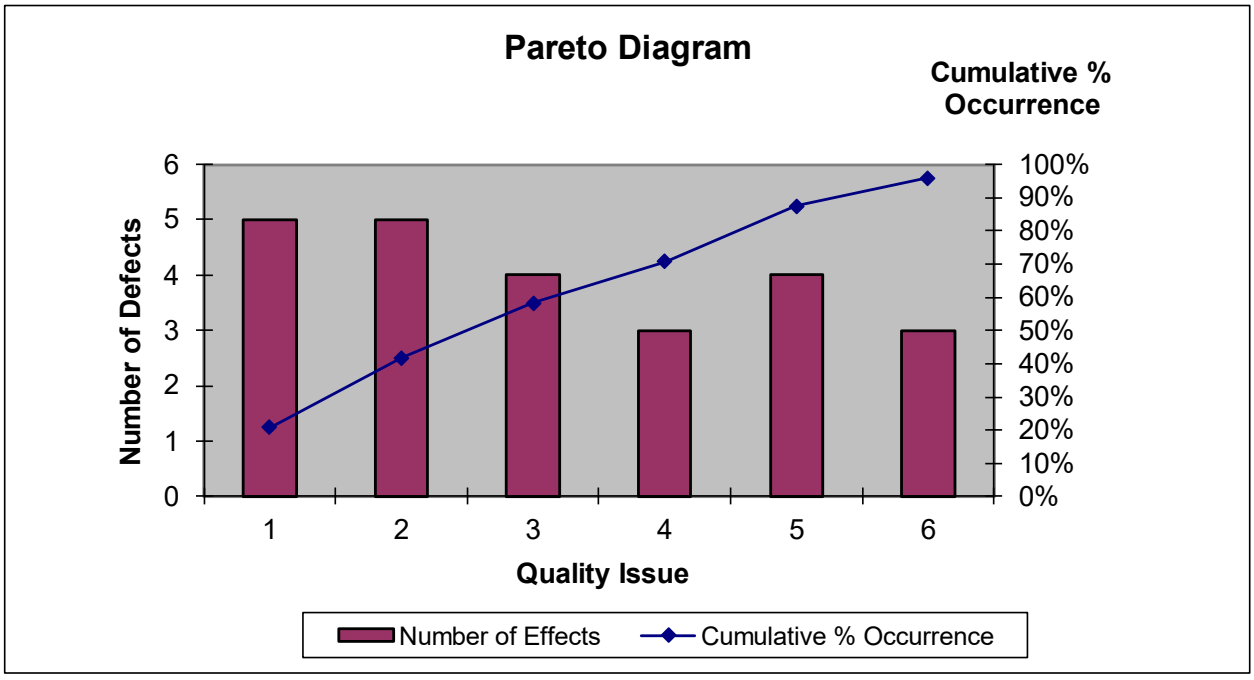
Authors
Ahmad Jawabreh & Zaid Mohtaseb

V1

Table of Contents

Pareto Diagram

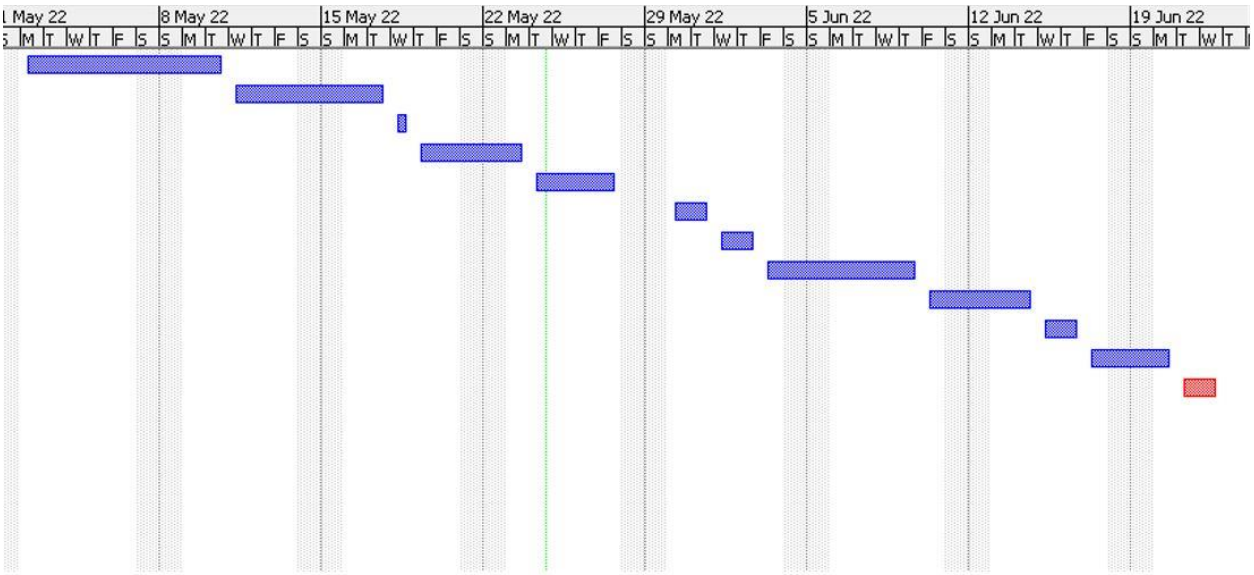
Quality Issue	1	2	3	4	5	6	Total
Number of Defects	5	5	4	3	4	3	24
% Occurrence	20.83%	20.83%	16.67%	12.50%	16.67%	12.50%	100%
Cumulative % Occurrence	20.83%	41.67%	58.33%	70.83%	87.50%	95.83%	



Resource Histogram

Gant Chart

	Name	Duration	Start	Finish
1	Order the hardware parts fr	7 days?	5/1/22 8:00 AM	5/10/22 5:00 PM
2	Hardware Connecting	5 days?	5/11/22 8:00 AM	5/17/22 5:00 PM
3	RF ID Coding	1 day?	5/18/22 8:00 AM	5/18/22 5:00 PM
4	Face Recognition Coding	3 days?	5/19/22 8:00 AM	5/23/22 5:00 PM
5	marked Face Recognition	4 days?	5/24/22 8:00 AM	5/27/22 5:00 PM
6	Database Creation	2 days?	5/28/22 8:00 AM	5/31/22 5:00 PM
7	Testing The Hardware & Soft	2 days?	6/1/22 8:00 AM	6/2/22 5:00 PM
8	Testing The System in Many	5 days?	6/3/22 8:00 AM	6/9/22 5:00 PM
9	EVMC Smart contract coding	3 days?	6/10/22 8:00 AM	6/14/22 5:00 PM
10	EVMC Smart contract Testing	2 days?	6/15/22 8:00 AM	6/16/22 5:00 PM
11	Chainlink To Kadena Bridge	2 days?	6/17/22 8:00 AM	6/20/22 5:00 PM
12	Testing The Smart Contract	2 days?	6/21/22 8:00 AM	6/22/22 5:00 PM



Human Resource Management Plan

1.0 Revision History

There are no changes.

2.0 Statement of Purpose

The purpose of this document is to provide a description of when and how different individuals will be added to and removed from MFR project. This document includes (a) a project overview, (b) information about the project organization, (c) the resource requirements for MFR project, (d) the resource assignment to different tasks of the work breakdown structure, (e) any known constraints, (f) any contingency plans, (g) training requirements, if any, (h) how human resource documentation will be conducted, (i) guidelines for managing change to the resource needs, (j) the rules for modifying the human resource management plan, and (k) the signature of key stakeholders.

3.0 Project Overview

3.1 Overview of the Organization

AZFCO. is a company started by three university students in North Cyprus, Our goal is to focus on the AI project based on high security network using blockchain networks with PoW consensus protocol, MFR project is a one of the AI projects also its based on blockchain network (KADENA) with PoW consensus protocol which follows our company aims, Our aim is to create fully recognition system that can recognize users voice, masked face, palm, finger print without touch and create a god eye system connected to out fully recognition system.

3.2 Current Situation and Problem/Opportunity Statement

Normal facial recognition systems have ability to recognize not covered faces, so this technology can be used as a personal security system such iPhone face ID, Lock and unlock the doors using face recognition, and etc.

If we need a system for public control like the systems that is used in China for public control, we need a system that is stable, accurate, and high efficiency but the current facial recognition technology is breakable because who want to make a crime will cover his/her face with a mask and the current technology is unable to recognize masked faces, so the criminal will simply get away with his crime, So we need a system meet this specifications and unbreakable.
So using a masked facial recognition system will add this advantages to the main system and we will have a high accurate system and using the blockchain networks for the system communication will make the system unbreakable.

This masked face recognition technology can be used as a sub system within God eye technology using the blockchain networks for communicating and chainlink technology to collect off-chain data, here we are talking abut closing the gap of the security, accuracy and efficiency.

3.3 Project Objectives

Project outputs:

- Masked Face Recognition System
- Alternative authentication method, RFID system
- Blockchain connection to data transfer and validation

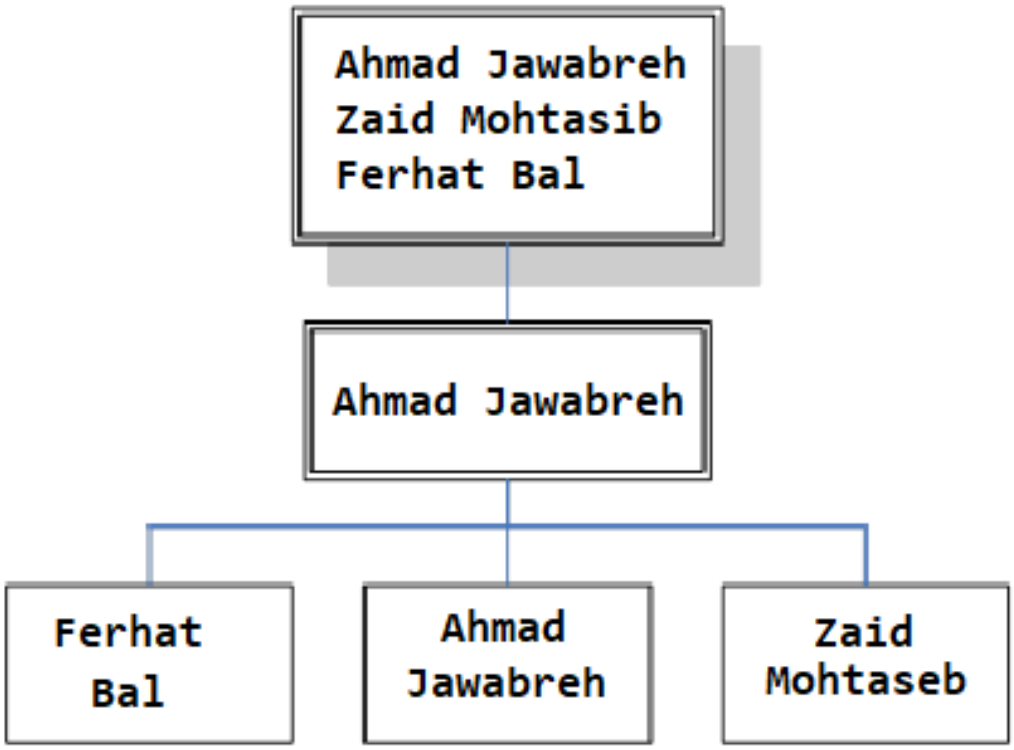
Project benefits:

- Masked Face recognition system for locking and unlocking the door.
- Masked Face recognition system as part of god eye project for public control.
- Masked Face recognition system can be used for face passport (Biometric passport).
- Solving the problem of inability to recognize masked faces which means solving of huge crimes.

4.0 Project Organization

4.1 Project Team

Name	Role	Phone Number	Email Address
Ahmad Jawabreh	Project Manager Hardware Specialist Smart Contract Developer	+972592675704	Ahmadjawabreh@protonmail.com
Zaid Mohtasib	Software Engineer	+97256937208	Zaidmoh@protonmail.com
Ferhat Bal	QA Specialist	+905338817935	ferhatbal@protonmail.com

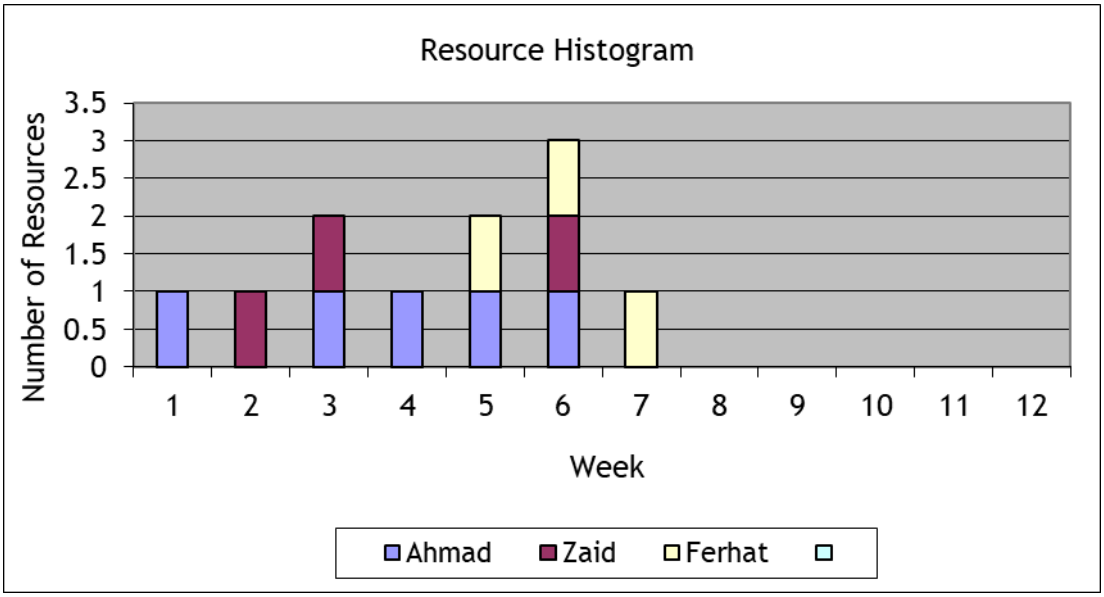


4.2 Key Stakeholders

Conduct a stakeholder analysis to identify key stakeholders, such as the project sponsor, project champion, as well as any external stakeholders, such as suppliers. Also include all pertinent information necessary to communicate with them.

	Zaid Mohtaseb	Ahmad Jawabreh	Ferhat Bal
Role Project	• Project Sponsor • Software Engineer • Management team member	• Project Sponsor • Project Manager • Hardware Specialist • Smart contract developer	• Project Sponsor • Quality Assurance team • Management team member
Organization	AZFCO.	AZFCO.	AZFCO.
Contact Information	Zaidmoh@protonmail.com	Jawabreh@protonmail.com	Ferhatbal@protonmail.com
Unique Facts	Prefers use GitHub for project code	Prefers use of email for project documents	Prefers use GitHub for project code and test sheets
Level of Interest	High	High	High
Level of Influence	High	High	High
Suggestions for managing relationships	Keep informed of all project progress	Keep informed of all project progress	Keep informed of all project progress

5.0 Resource Requirements



6.0 Resource Assignment

Task ID	Task	Team member
1	Hardware connecting	Ahmad (P)
1.1	RFID connecting	Ahmad (P)
1.1.1	Connect RFID Reader	Ahmad (P)
1.1.2	Connect the LED's	Ahmad (P)
1.1.3	Connect the alphanumeric LCD	Ahmad (P)
1.1.4	Connect the micro servo motor	Ahmad (P)
1.2	Masked face recognition connecting	Ahmad (P)
1.2.1	Connect the camera	Ahmad (P)
1.2.2	Connect wavesshare LCD screen	Ahmad (P)
1.3	Sensors connecting	Ahmad (P)
1.3.1	Connect the distance sensors	Ahmad (P)
1.3.2	Connect the gas sensor	Ahmad (P)
1.3.3	Connect the flame sensor	Ahmad (P)
1.3.4	Connect the speaker	Ahmad (P)
1.4	Network connecting	Ahmad (P)
1.4.1	Connect the ethernet port	Ahmad (P)
1.5	Power and electricity connecting	Ahmad (P)
1.5.1	Connect the 9V battery	Ahmad (P)
1.5.2	Connect the power cable	Ahmad (P)

2	Coding	Zaid (P)
2.1	RFID Coding	Zaid (P)
2.2	Face recognition coding	Zaid (P)
2.3	Masked face recognition	Zaid (P)
3	Database creation	Zaid (P)
3.1	Database schema preparing	Zaid (P)
3.2	Database coding	Zaid (P)
3.3	Adding data to the database	Zaid (P)
3.4	Database connecting	Zaid (P)
4	Smart contract development	Ahmad (P)
4.1	chainlink to Kadena blockchain bridge	Ahmad (P)
4.2	Smart contract designing	Ahmad (P)
4.3	Smart contract coding	Ahmad (P)
4.4	Smart contract testing	Ferhat (P) Ahmad (S)
4.4.1	Testing the system with the smart contract on testnet	Ferhat (P) Ahmad (S)
4.4.2	Testing the system with the smart contract on mainnet	Ferhat (P) Ahmad (S)
4.5	Deployment on mainnet	Ahmad (P)
5	Testing	Ferhat (P)
5.1	Testing the connection of hardware parts	Ferhat (P) Ahmad (S)
5.2	Testing the system	Ferhat (P) Ahmad (S) Zaid (S)
5.2.1	RFID code testing	Ferhat (P) Zaid (S)
5.2.2	Face recognition code testing	Ferhat (P) Zaid (S)
5.2.3	Masked face recognition code testing	Ferhat (P) Zaid (S)
5.3	Testing the connection of the database	Ferhat (P) Zaid (S)
5.4	Testing the system with the smart contract on the test net	Ferhat (P) Ahmad (S)
5.5	Testing the system with the smart contract on the mainnet	Ferhat (P) Ahmad (S)

7.0 Resource Constraints

Experts from Chainlink Labs have already been hired, who are responsible for creating the smart contract (bridge) that will connect the KADENA network with the Chainlink network, and the same experts have been asked to help the team to solve a problem that we encountered in the truffle environment.

8.0 Contingency Plans

15% of the company's net profits will be continuously deducted and placed in the company's treasury to serve as the company's reserve in case we face any financial problem that requires liquidity.

9.0 Training Requirements

- Hardware Team:
  - Bachelors Degree in Computer Engineering, Electrical and Electronic Engineering or a related technical discipline.
  - Extensive experience with Arduino, RaspberryPi and Microcontrollers.

- Software Team :
  - Bachelors Degree in Software Engineering, Computer Science or a related technical discipline.
  - Extensive experience with Python.

- Smart contract team:
  - Write well-documented, performant, clean, and re-usable Solidity code.
  - Familiar with EVM environments
  - Familiar with Pact and Plutus programming languages.

11.0 Human Resource Change Management Process

Changes will be overlooked carefully. But before the changes, it will be discussed as to why the change is needed and if that change is even enough to fix the main problem and we will also look for the risks revolving around the said change and then it will be implemented upon approval. The changes will be implemented in the simple following 4 steps:

- Preparing for Change
- Initiating Change
- Putting Change in Place
- Stabilizing Change

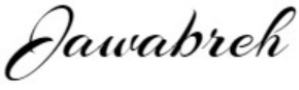
12.0 Plan Modification Rules

- Any changes on the plan need the project manager approval.
- Changes related to the financial issues needs the approval of the finance department with the project manager approval.
- Changes related to the hardware work needs the approval of the hardware department with the project manager approval.
- Changes related to the software work needs the approval of the software department with the project manager approval

13.0 Approval Signatures

Project Manager:

As project manager on MFR project, I have reviewed the information contained in the Human Resource Management Plan and agree to its content.

Name	Position	Signature
Ahmad Jawabreh	Hardware Specialist - Smart Contract Developer	

The signatures above represent stakeholders' agreement and acknowledgement of the information contained in this document.

End Report

1.0 Statement of Purpose

The purpose of this document is to provide a summary of the different project management methods and techniques that have been used over the life cycle of the project. This document includes (a) a statement indicating whether the project objectives were met, (b) an indication of whether the budget and schedule were as planned, (c) a list of the changes that were approved during the project life cycle, (d) an analysis of all the quality work performed, (e) a description of the customer acceptance process, (f) a description of how any contracts were terminated, (g) a summary of the project management plan, (h) an indication of when the post implementation review will be conducted, and (i) a list of the different project documents that will be archived.

2.0 Achievement of Project Objectives

Project objectives

- Find a solution to recognize masked faces.
- Find alternative authentication method based on touch less.
- Decentralization of processing the data.

Project outputs:

- Masked Face Recognition System.
- Alternative authentication method, RFID system.
- Blockchain connection to data transfer and validation

3.0 Project Performance

Cost: In the cost estimation was 1880TL but in face the project costs us 2127TL

Time: The project was done on the time without any changes

4.0 Approved Changes

One of the team members left the team, the tasks assigned to each team member were restructured by dividing the tasks of the member who left on the rest of the team members to complete the project within the specified time.

5.0 Quality Analysis

Since the start of the project, certain restrictions have been placed regarding the quality of the product so that the product is able to carry out its function with an error rate that does not exceed 10%.

Hardware parts have been carefully selected so that we have chosen original and high-quality parts to avoid errors in the system

The software team and the quality assurance team were working in perfect harmony to try to avoid any kind of errors in the code that could cause an increase in the error rate in obtaining the desired result.

The success rate of face recognition process is 95%, which is higher than the planned percentage.

6.0 Final Customer Acceptance

Due to the timely delivery of the product and the quality of the product, as the project was completed on time and with a system success rate higher than planned by the customer with the product, the meeting was attended by the project manager, contract manager, software engineer and quality assurance officer. The project delivery documents were signed and the customer paid the last payment.

7.0 Contract Closure

Regarding the main contract of the project, the contract was closed by delivering the project on time and within the required quality standards, as the client paid the last payment according to the project contract

9.0 Post Implementation Review

A review after implementation began with a comprehensive evaluation of the actual cost of the project compared to the Cost Estimation and a review of the reasons that led to an increase in the cost. The review also included an evaluation of the time, as the project was completed on time actually, and the last review was for the quality of the product and to ensure that the product can perform its function with the highest limit of permissible errors.

10.0 Project Archives

Project Research

Project Proposal

Work Breakdown Structure

Work Breakdown Structure Dictionary

Activity List

Activity Resource Requirement

Activity Duration Estimation

Cause and effect diagram

Gant Chart

Activity Cost Estimation

Business Case

Communication Matrix

Communication Plan

Contract Agreement

Contract Management

Control Chart

Corrective Actions List

Risk Breakdown Structure

Pareto Diagram

Resource Histogram

HR management plan

End Report