REPUBLIQUE DU CAMEROUN

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JFN – HIGHTECH UNIVERSITY INSTITUTE

REPUBLIC OF CAMEROON

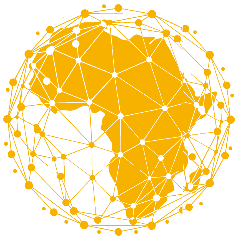
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DEPARTMENT LOGO

INTERNSHIP REPORT

Implementation of Face Recognition-based Employee Attendance system

An internship report carried out at **DGITAL STRATEGIES** from **01/07/2024 – 31/08/2024** and *submitted* to JFN – HIGH-TECH UNIVERSITY INSTITUTE *as partial fulfilment of the requirement for the award of a* HIGHER NATIONAL DIPLOMA (HND) in **Software Engineering**.

**By**:

**Souop Silvain Brayan**

**Under the supervision of :**

*And*

**Mr. Kafah Nkanjoh Mekwi.**

**Dr Dongmo zemgue**

***Professional Superviser :***

***Academic Superviser :***

**ACADEMIC YEAR 2024-2025**

# DECLARATION

# DECLARATION

I, Souop Silvain Brayan hereby declare that I am the author of this project. I then authorize the school of JFN-HUI to lend this to other institutions or individuals who may want to carry out scholarly research. I am aware of the University’s Policy on this. I certify that this project is the original work carried by me during my project except for the work cited in the references.

**SOUOP SILVAIN BRAYAN**

Signature……………………………………

Date………………………………………………

# CERTIFICATION

# CERTIFICATION

This is to certify that this project entitled “**DESIGN AND IMPLEMENTATION OF FACE RECOGNITION-BASED EMPLOYEE ATTENDANCE SYSTEM”** and presented to the Department of Software Engineering is the original work of SOUOP SILVAIN BRAYAN aiming for the award of HND in Software Engineering during the academic year 2022/2023 under the supervision of **Dr Dongmo zemgue**

**ACADEMIC SUPERVISOR PROFESSIONAL SUPERVISOR**

**Dr Dongmo zemgue Mr. Kafah Nkanjoh Mekwi**

**Sign…………………………………… Sign**……………………………………………….

**Date**…………………………………… **Date**………………………………………………

**PRESIDENT OF JURY**

Sign……………………………………

Date……………………………………….

# DEDICATION

# DEDICATION

TO

MY LOVED ONES

TO

MY LOVED ONES

# AKNOWLEGDEMENT

# AKNOWLEGDEMENT

By the overwhelming joy that I have, I hereby thank the ALMIGHTY LORD Also, the realization of this project would not have been possible without the intervention of the many people whom I want to thank sincerely:

* Mr. NAFACK Alphonse the founder of JFN-institute of technology for the great opportunity for receiving the opportunity of acquiring one of the best formations that he provides to us the younger generation.
* All the employees of the DIGITAL STRATEGIES, for their sympathy and their help throughout that journey. Specially, Kafah Nkanjoh Mekwi for their guidance and follow up during my internship.
* All my teachers and classmates, for their mentorship and their support since the beginning.

# ABSTRACT

# ABSTRACT

During the period from October 2, 2024, to January 4, 2025, I completed an internship at Digital Strategies, a company specializing in web development, IT solutions, digital marketing, and software engineering. During this period, I had the opportunity to work on real-world projects, gaining hands-on experience particularly in frontend development, UI/UX design, and working with modern frameworks.

One of my most significant achievements during this internship was developing and implementing a Face Recognition-based Employee Attendance System. This project allowed me to apply my technical skills in AI, computer vision, and software development, enhancing my problem-solving abilities and deepening my understanding of real-world AI applications. The experience also gave me insight into professional work environments, project management, and collaboration within a tech company.

As someone who aspires to become an AI Engineer, this internship was a crucial step in my journey, providing me with both technical and professional growth. None of this would have been possible without the unwavering support of my mother and stepfather, as well as the valuable guidance and mentorship from my supervisor, and other professionals who helped me build the right mindset for the industry.

This experience has reinforced my passion for artificial intelligence and has motivated me to continue learning and working towards my goals.

# RESUME

# PREFACE RESUME

Pendant la période du 2 octobre 2024 au 4 janvier 2025, j'ai effectué un stage chez Digital Strategies, une entreprise spécialisée dans le développement web, les solutions informatiques, le marketing digital et l'ingénierie logicielle. Durant ce stage, j'ai eu l'opportunité de travailler sur des projets concrets, acquérant une expérience pratique notamment en développement frontend, en conception UI/UX et en utilisation de frameworks modernes.

L'une de mes réalisations les plus significatives au cours de ce stage a été le développement et l'implémentation d'un système de pointage des employés basé sur la reconnaissance faciale. Ce projet m'a permis d'appliquer mes compétences techniques en intelligence artificielle, en vision par ordinateur et en développement logiciel, améliorant ainsi mes capacités de résolution de problèmes et approfondissant ma compréhension des applications réelles de l'IA. Cette expérience m'a également apporté un aperçu du milieu professionnel, de la gestion de projet et du travail en équipe au sein d'une entreprise technologique.

Aspirant à devenir ingénieur en intelligence artificielle, ce stage a été une étape cruciale dans mon parcours, m'apportant une croissance à la fois technique et professionnelle. Rien de tout cela n'aurait été possible sans le soutien indéfectible de ma mère et de mon beau-père, ainsi que la précieuse guidance et le mentorat de mon superviseur et d'autres professionnels qui m'ont aidé à développer le bon état d'esprit pour évoluer dans l'industrie.

Cette expérience a renforcé ma passion pour l'intelligence artificielle et m'a motivé à continuer d'apprendre et de progresser vers mes objectifs.

# PREFACE

# ABBREVIATION AND ACRONYMSPREFACE

**JFN High-tech University Institute** is a private university of excellence and innovation offering formations for direct employment. It was founded next to the state degree of N° **22-02948/MINESUP/SG/DDES/SD-ESUP/SDA/AEO.**

**JFN High-tech University Institute** dispose of three schools:

* **A Higher Superior Engineering School (ESI)**
* **A School of Numerique and Innovation (ENI)**
* **A School of Management and Entrepreneurship (EME)**

In partner with **Google Cloud, QWASAR Silicon Valley, DUNIS, BEM Dakar, Cisco Networking Academy, Le Pole Universitaire Leonard de Vinci, JFN High-tech University Institute** training in the domain of engineering and management in:

* **Preparations classes,** for students who wishes to continue in France, Canada, USA, United Kingdom (UK);
* **Bachelor’s programs in engineering**
* **Formations in management in engineering**
* **Direct formation in LMD**

**JFN High-tech University Institute prepare students in the domain of: DUT, DEUG, BTS/HND, Licence/Bachelor, Master degree, diplome d’ingénnieur.**

# ABBREVIATION AND ACRONYMS

# ABBREVIATION AND ACRONYMS

 **AI** – Artificial Intelligence

 **CV** – Computer Vision

 **UI/UX** – User Interface/User Experience

 **API** – Application Programming Interface

 **DBMS** – Database Management System

 **SQL** – Structured Query Language

 **FRS** – Face Recognition System

 **CNN** – Convolutional Neural Network

 **HR** – Human Resources

 **ERP** – Enterprise Resource Planning

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# CHAPTER 1: GENERAL INTRODUCTION

## INTRODUCTION

This part is made up of two (2) chapters. Chapter one is divided into two sections, talking about the general presentation of soft technologies. Section 2 talking about the organigram of soft technologies.

### SECTION ONE: GENERAL PRESENTATION OF SOFT TECHNOLOGIES

Soft Technologies is a professional training organization that offers such as Initiation to numerical economics and crypto currency, Analysis and implementation of Blockchain projects, Active trading, Digital and community manager marketing, Blogging, Web redaction, Web development, Graphic design and branding, How to generate money online, Creation and management of an association/NGO, Network Installations and more.

### MISSION

As part of projects, Soft Technologies trains people and find markets after training. After training, Soft Technologies takes the charge and supports these people interested to find markets on which they can work.

## PRESENTATION OF THE CENTER

Get an authentic certificate both by Soft Technologies and by expert partners who are supporting in order to offer excellent qualities of the courses. The educational approach of Soft Technologies relies on:

❖ A career approach: Soft Technologies accompanies in the development of your skills in order to ensure you find a job or improve you in a professional environment.

❖ An entrepreneurial approach: Soft Technologies has through available course modules on platforms, skills allow you to become an argue and warned entrepreneur.

❖ A digital approach: Soft Technologies is available to the learners, digital tools to facilitate their learning.

### CENTER VISION

Soft Technologies has a better preparation of young people for employability, entrepreneurship and availability for all of a professional retraining.

### VALUES

Soft Technologies has a better preparation of young people for employability, entrepreneurship and availability for all of a professional retraining.

❖ Promote employability

❖ Promote entrepreneurship

❖ Improve professionalism

### 1. PILLARS

Soft Technologies has three pillars which relies on,

❖ Entrepreneurial spirit

❖ Creativity

❖ Professional competence

❖ Teach people how to block their time

### RESOURCES

Every resource is defined with a set of attributes. The attributes are the properties of the resource. The resource of Soft Technologies includes;

### HUMAN RESOURCES

Soft Technologies by qualified personnel who devote their time and energy to the smooth functioning of the company. This includes:

❖ THE CEO

❖ SECRETARY/ACCOUNTANT

❖ WEB DEVELOPPER

❖ PERSON IN CHARGE OF THE DIGITAL COMMUNICATION

❖ PROFESSIONAL TRAINERS

### MATERIAL RESOURCES

Soft Technologies has two large offices, one located at Bonaberi and the second office located at Deido. The various material resources include;

❖ Air-conditioned offices of which (one reception room, two meeting rooms, computer equipment’s).

❖ One reception room made for the Secretary/Accountant.

❖ Two meeting rooms, one meeting room for the CEO and the last meeting room to receive people for training.

### FINANCIAL RESOURCES

Soft Technologies owns its funds from the training fees/tuition and the financing of the banks and personal savings.

### ORGANIZATION

Soft Technologies as many other institutions has an organizational chart. This is in order to ease the achievement of their goals through the division of labor. By this, employees are shared to various departments having a supervisor.

### STRUCTURAL ANALYSES

Soft Technologies exercises its services in a dependent way with the supervisor of the state which is represented by the Minister of Small and Medium Enterprises.

### FUNCTIONAL ANALYSES

Within it, Soft Technologies is committed to the voice of decentralized tasks in order to be close to young entrepreneurs and workers and provide them with effective services.

### CHAIRMAN AND CEO

He is responsible for the supervision, management and coordination of overall operations. Which include, delegating and directing agendas, driving profitability, managing company organizational structure, strategy and communicating with the board.

### SECRETARY/ACCOUNTANT

The principal responsibility of the position is to maintain the unity and organizational effectiveness of the company’s movement as a whole while driving forward a program of renewal, and to advance its social and economic program.

The secretary accountant must have experience at a senior leadership level preferably within the company. Also, performs financial functions related to the collection, accuracy, recording, analysis and presentation of a business, organization or company’s financial operations…

Generally, the secretary accountant can also deal with the third parties, such as vendors, customers and financial institution such as Expression Union…. Staff accountant responsibility is to meet with clients to discuss their financial matters, such as real property, equipment and tax liability.

### THE PERSON IN CHARGE OF THE DIGITAL COMMUNICATION

Its responsibility is to oversee the development and publishing of all digital communications content. He also assists the online campaigns, promoting the company’s products and goals to the public, either as part of a specific campaign or on a holistic level.

In general, a digital communication manager has the duty to manage a company’s website or blog, associating with content creation (e.g., photography, graphic design, charts, polls, scripts…) analyzing relevant data and metrics, identifying new technologies and trends. Most digital communication managers work weekdays in an office setting.

### WEB DEVELOPPER

It has as function to ensure websites to look good and function properly. Web developers collaborate with website and graphic designers. In general, the role of a web developer it to design, create and maintain websites, providing in the process a cohesive and user-friendly online portal for the use of clients, customers, work colleagues and other interested parties.

### THE TRAINERS

A trainer trains learners face-to-face or at a distance. He/she presents pedagogical content, offers activities and gives feedback to its learners.

The trainer must be enthusiastic and fool proof dynamism at every test. He is the first motivator of his learners and believe in his training. No matter the subject of the training, nor the general conditions, he must always be positive (through is smile) it’s very important.

### OPERATORS

Soft Technologies has a lot of services it renders to clients which could be explained below:

### PUBLICITY

In terms of publicity, Soft Technologies uses the different social media to advertise its different products. Also, to let them understand that they could feel at home bringing in their problems this will definitely be heard and answered and by making great opportunities for the young and dynamic entrepreneurs.

SECTION TWO: ORGANIGRAM OF SOFT TECHNOLOGIES

ORGANIGRAM OF SOFT TECHNOLOGIES