

**Project Title:** AI-Driven Personalized Health Recommendations System

**Role:** AI Ethics Officer

**Company:** Cigna

**Objective:** Develop an AI system to provide personalized health recommendations to patients, helping improve their overall health and wellness through tailored advice and interventions.

---

## 1. Project Planning Phase (Month 1)

**Timeline:** July 2023

**Key Activities:**

- **Stakeholder Engagement:** Held meetings with healthcare providers, dietitians, fitness experts, and patients to gather requirements and understand the ethical considerations for the AI system.
- **Requirement Gathering:** Collaborated with the data science team to outline the technical and ethical requirements for the AI model.

**Key Team Members:**

- **Data Scientists:** Dr. Emma Johnson, Dr. Alex Smith
- **Healthcare Providers:** Dr. Laura White, Nurse John Davis
- **Dietitians:** Sarah Walker, Emily Brown
- **Project Manager:** Michael Brown
- **IT and Data Security:** Sarah Taylor

**Software Tools Used:**

- **Jira:** For project management and tracking progress.
  - **Confluence:** For documentation and requirement gathering.
- 

## 2. Development Phase (Months 2-4)

**Timeline:** August - October 2023

**Key Activities:**

- **Data Collection and Preparation:** Ensured the use of anonymized patient data and obtained necessary permissions for data usage.

- **Bias Detection and Mitigation:** Utilized Fairlearn to identify and mitigate biases in the training data, ensuring fair recommendations for all patients.
- **Algorithm Selection and Training:** Worked with data scientists to select appropriate algorithms and validate the model's fairness and accuracy.

#### Key Team Members:

- **Data Scientists:** Dr. Emma Johnson, Dr. Alex Smith
- **Data Engineers:** Lisa Green, Tom Martinez
- **Ethics Committee:** Myself, Dr. Susan Clarke

#### Software Tools Used:

- **Fairlearn:** For bias detection and mitigation.
  - **PyTorch:** For model training and development.
  - **Jupyter Notebooks:** For experimentation and documentation.
- 

### 3. Testing and Validation Phase (Month 5)

**Timeline:** November 2023

#### Key Activities:

- **Model Testing:** Conducted rigorous testing to ensure model accuracy, fairness, and reliability in providing personalized health recommendations.
- **Stakeholder Review:** Presented the model to stakeholders for feedback and validation.
- **Ethical Review:** Conducted an ethical review to ensure the model adheres to our ethical guidelines and does not disproportionately favor or neglect any patient group.

#### Key Team Members:

- **Quality Assurance:** Anna Reed, Mark Thompson
- **Healthcare Providers:** Dr. Laura White, Nurse John Davis
- **Ethics Committee:** Myself, Dr. Susan Clarke

#### Software Tools Used:

- **scikit-learn:** For testing model performance.
  - **LIME (Local Interpretable Model-agnostic Explanations):** For explaining model predictions.
- 

### 4. Deployment Phase (Month 6)

**Timeline:** December 2023

**Key Activities:**

- **Deployment Strategy:** Developed a deployment plan ensuring data security and compliance with healthcare regulations.
- **Training and Support:** Provided training sessions for healthcare providers on using the new AI system.
- **Launch:** Successfully launched the AI system in partner hospitals and clinics.

**Key Team Members:**

- **IT and Data Security:** Sarah Taylor, Tom Lee
- **Training Coordinators:** Jessica Adams, Robert Harris
- **Project Manager:** Michael Brown

**Software Tools Used:**

- **Docker:** For containerizing the application.
  - **Kubernetes:** For managing deployment.
  - **Splunk:** For monitoring system performance post-deployment.
- 

## **5. Monitoring and Evaluation Phase (Months 7-12)**

**Timeline:** January - June 2024

**Key Activities:**

- **Continuous Monitoring:** Established continuous monitoring of the AI system to track performance and detect any drift in model predictions.
- **Feedback Collection:** Collected feedback from healthcare providers and patients to identify areas for improvement.
- **Periodic Reviews:** Conducted periodic reviews to ensure ongoing compliance with ethical standards and regulatory requirements.

**Key Team Members:**

- **IT and Data Security:** Sarah Taylor, Tom Lee
- **Data Scientists:** Dr. Emma Johnson, Dr. Alex Smith
- **Healthcare Providers:** Dr. Laura White, Nurse John Davis

**Software Tools Used:**

- **Prometheus:** For monitoring system performance and alerting.

- **Tableau:** For visualizing performance metrics and feedback.
  - **Jira:** For tracking issues and improvements.
- 

## Conclusion

As the AI Ethics Officer, I played a vital role in ensuring the ethical development and deployment of the AI-Driven Personalized Health Recommendations System. By collaborating closely with diverse teams, utilizing advanced software tools, and adhering to strict timelines, we successfully developed and implemented a system that provides personalized health advice to patients, enhancing their overall wellness. This project exemplifies our commitment to ethical AI practices and continuous improvement.

---

This structured and detailed report highlights my contributions and the collaborative efforts of the team, showcasing how we ensured the ethical and successful deployment of an AI system in a healthcare setting, running concurrently with the AI-Powered Claims Fraud Detection System project.