Project Title: AI-Powered Claims Fraud Detection System

Role: AI Ethics Officer

Company: Cigna

Objective: Develop an AI system to detect fraudulent insurance claims, reducing financial losses and ensuring fair treatment of legitimate claims.

1. Project Planning Phase (Month 1)

Timeline: July 2023

Key Activities:

- **Stakeholder Engagement:** Conducted meetings with insurance adjusters, fraud investigators, and compliance officers to gather requirements and understand ethical considerations.
- **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
- **Fraud Investigators:** Laura Green, John Parker
- **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 data and obtained necessary permissions for data usage.

- **Bias Detection and Mitigation:** Utilized Microsoft Fairlearn to identify and mitigate biases in the training data, ensuring fairness in fraud detection.
- **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:** Emma J., Alex S.
- **Data Engineers:** Lisa G., Tom M.
- **Ethics Committee:** Myself, Dr. Susan C.

Software Tools Used:

- **Microsoft 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 detecting fraudulent claims.
- **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 target specific groups.

Key Team Members:

- **Quality Assurance:** Anna R., Mark T.
- **Fraud Investigators:** Laura G., John P.
- **Ethics Committee:** Myself, Dr. Susan C.

Software Tools Used:

- **scikit-learn:** For testing model performance.
- **Google's What-If Tool:** For analyzing model behavior and fairness.

4. Deployment Phase (Month 6)

Timeline: December 2023

Key Activities:

- **Deployment Strategy:** Developed a deployment plan ensuring data security and compliance with regulatory requirements.
- **Training and Support:** Provided training sessions for fraud investigators and claims adjusters on using the new system.
- **Launch:** Successfully launched the AI system in the fraud detection department.

Key Team Members:

- **IT and Data Security:** Sarah T., Tom L.
- **Training Coordinators:** Jessica A. Robert H.
- **Project Manager:** Michael B.

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 fraud investigators and claims adjusters 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 T., Tom L.
- **Data Scientists:** Dr. Emma J. Dr. Alex S.
- **Fraud Investigators:** Laura G., John P.

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-Powered Claims Fraud Detection System. By collaborating closely with diverse teams, utilizing advanced software tools, and adhering to strict timelines, we successfully developed and implemented a system that reduces fraud while ensuring fair treatment of legitimate claims. This project demonstrates our commitment to ethical AI practices and continuous improvement.