Project Title

- AI-Driven Predictive Analytics in Emergency Service Apps: Proactive Resource Allocation and Incident Response Enhancement

Significance / Contribution to the Discipline / Research Problem

- Overview of emergency service apps and current limitations.
- Importance of proactive resource allocation and incident response in saving lives.
- The role of AI-driven predictive analytics in anticipating needs and identifying trends.
- Potential contributions to emergency management and public safety by improving overall effectiveness.

Research Question

- How can AI-driven predictive analytics be integrated into emergency service apps to allocate resources and enhance incident response proactively?

Aims and Objectives

- To review existing literature on AI-driven predictive analytics in emergency service apps.
- To identify gaps in current research and applications, focusing on anticipating needs and identifying trends.
- To develop a methodology for incorporating AI-driven predictive analytics into emergency service apps for proactive resource allocation.
- To evaluate the effectiveness of the proposed approach in enhancing incident response and the overall effectiveness of emergency services.

Key Literature related to the project

- Emergency service apps: current applications and challenges in resource allocation and incident response
- AI-driven predictive analytics in emergency management and public safety
- Proactive resource allocation and incident response strategies utilizing AI-driven insights
- Ethical considerations and risk mitigation strategies in implementing AI-driven decision-making and predictive analytics in emergency service apps

Methodology / Development Strategy / Research Design

- *Research design*: Conclusive Research, as it aims to provide actionable insights and verify the effectiveness of AI-driven predictive analytics in emergency service apps
- *Research method*: Mixed Methods Research combining both quantitative and qualitative data to provide a comprehensive understanding of the problem and its solution
- *Data collection method*: Quantitative: Collection of historical data on emergency incidents, resource allocation, and response times
- *Steps in the research process*:
    - Systematic literature review to identify existing AI-driven predictive analytics approaches and their limitations in emergency service apps
    - Development of a predictive analytics framework tailored to emergency service apps, focusing on anticipating needs and identifying trends
    - Validation and testing of the proposed approach using historical data and simulated scenarios

    - Evaluation of the impact on incident response times, resource allocation efficiency, and overall effectiveness of emergency services through quantitative and qualitative data analysis

Ethical considerations and risk assessment

- Privacy concerns in data collection and analysis for AI-driven predictive analytics
- Algorithmic bias and fairness in decision-making and trend identification
- Risk of overreliance on AI-driven recommendations and predictions
- Strategies for mitigating ethical risks and ensuring responsible AI use in emergency service apps

Description of artefact(s) that will be created

- AI-driven predictive analytics framework for emergency service apps focused on proactive resource allocation and incident response enhancement
- Evaluation of reports and case studies demonstrating the effectiveness of the proposed approach in improving emergency services' overall effectiveness

Timeline of proposed activities (13.06.2023 - 29.01.2024)

- 13.06.2023 - 12.07.2023: Systematic literature review and identification of research gaps in AI-driven predictive analytics for emergency service apps
- 13.07.2023 - 12.10.2023: Development of predictive analytics framework and AI algorithms, focusing on anticipating needs and identifying trends
- 13.10.2023 - 12.12.2023: Testing of the proposed approach using historical data, and simulations
- 13.12.2023 - 29.01.2024: Evaluation of the impact on resource allocation, incident response, and overall effectiveness; preparation of the capstone piece and presentation