Chop AI

Comprehensive Hospital Outcome Prediction

AI assisted resource allocation and planning made easy

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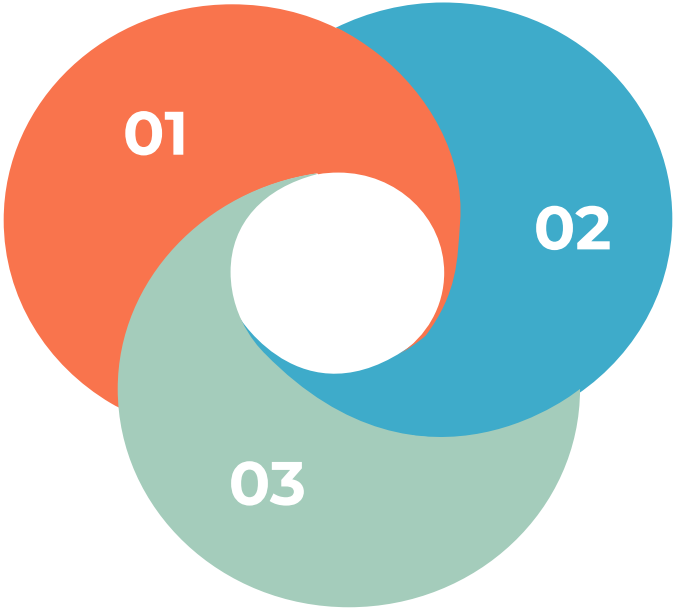
PITCH

In the medical sphere, predicting and allocating resources needed is a difficult task



Our vision is to help hospitals better plan and allocate resources

By developing a model that predicts patient outcomes, hospitals can make more efficient resource allocation decisions

Proposed Solution

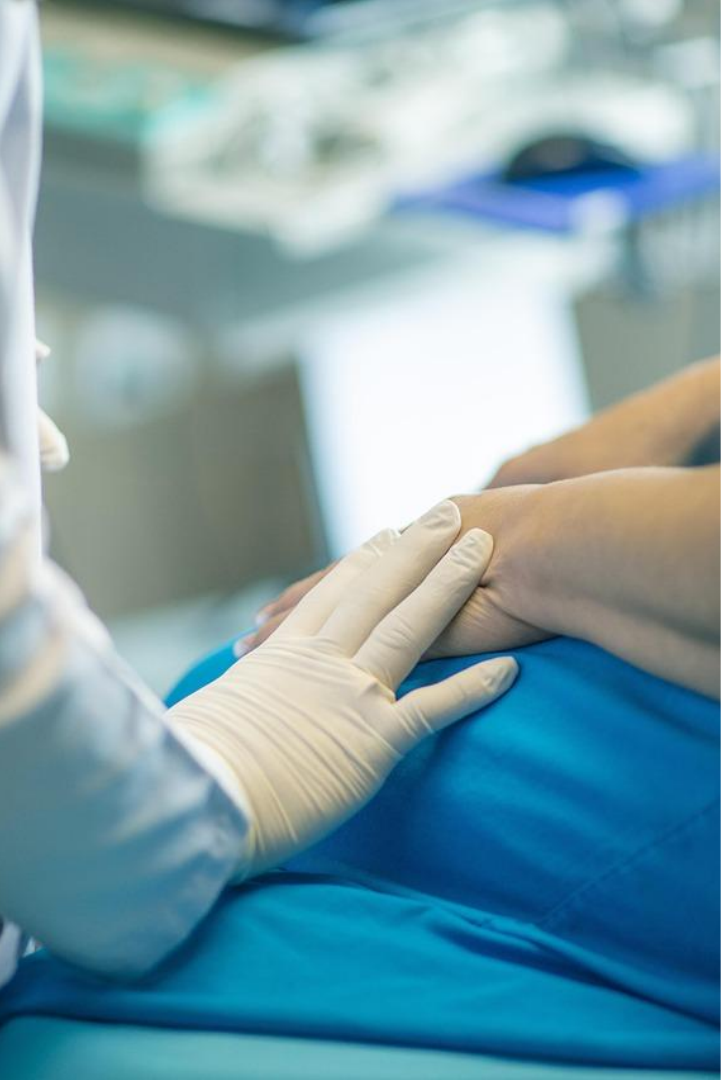
- Develop a model that can predict aspects of patient stay, including duration and risk of death
- By having a better understanding of patient needs, hospitals can plan for resource allocation
- This model will leverage patient information to make accurate predictions

Technologies Used

- Python
- Pandas
- Scikit-learn
- Numpy
- Seaborn
- Matplotlib
- FastAPI
- Uvicorn
- W3 HTML Elements

Objectives

- Dummy Hospital: Create a fake hospital with room, patient, and staff records
- Data preparation: Extract and join relevant information from multiple CSV files
- Develop a Predictive Model: Create a model capable of accurately predicting patient outcomes
- Model Accuracy: Set a baseline of 80% for a successful model
- Hospital Management System: Create a management suite for patient and staff management
- Deploy Model: Integrate the model into the management software



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Data Sources

01 MIMIC-IV Clinical Database: Provides comprehensive clinical information on patients

02 It contains data from patients admitted to Beth Israel Deaconess Medical Center

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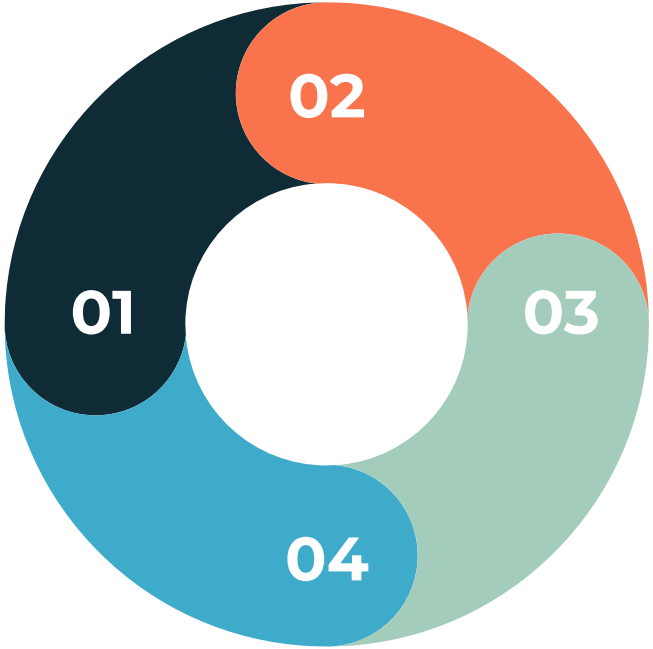
Models

- Length of Stay: Random Forest Regression Model that explains 78% of the variance in the target variable
- Death Prediction: Logistic Regression Model with 98% classification accuracy
- Readmissions: Random Forest Classifier with 84% accuracy

Conclusion

The CHOP Model demonstrates the potential of machine learning in healthcare

Improves patient outcomes and optimizes resource allocation



Historical data provides actionable insights for informed decision-making

Demo dashboard provides useful metrics for hospital administrators

Thank you for your time and attention 🙂