**Paper Summary 1**

| Paper number | 1 |
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| Read by | Param Jagani |
| Title of paper and author details | Banking Customer Retention Prediction/ Banking Churn Prediction  Authors - Saurabh Badole |
| Publication year, publication body | 2021  Kaggle |
| Domain of paper [sentiment analysis/ ontology construction…etc] | Finance and Banking  Customer Relationship Management (CRM)  Predictive Analytics |
| Dataset used/ Datasources [if any] | Banking Customer DataSet  [Banking Customer Churn Prediction Dataset (kaggle.com)](https://www.kaggle.com/datasets/saurabhbadole/bank-customer-churn-prediction-dataset/data) |
| Implementation tools/ technlologies used [if any] | Support Vector Machine (SVM)  Logistic Regression  Gradient Boosting Machines (GBM)  Decision Tree (DT)  Random Forest (RF)  K-Nearest Neighbors (KNN) |
| Results given and evaluation parameters used | Decision Tree (DT): 78  Logistic Regression: 82  Random Forest: 84  SVM: 83  GBM: 85 |
| Highlights/summary of paper in your words | This research paper develops machine learning models to predict and reduce customer churn in the banking sector, using a Kaggle dataset.  It highlights the importance of data preprocessing, model selection, and evaluation metrics in developing effective predictive models.  The study's findings underscore the potential of machine learning to drive customer retention strategies and improve overall business outcomes in the banking industry. |
| Future enhancements suggested | **Model Optimization**: Explore advanced optimization techniques such as Bayesian Optimization or Genetic Algorithms for hyperparameter tuning to further enhance model performance.  **Real-Time Prediction**: Implement real-time prediction capabilities to allow banks to immediately identify at-risk customers and take prompt action to retain them.  **Continuous Learning**: Develop mechanisms for continuous model training and updating to adapt to changing customer behaviors and market conditions, ensuring the model remains relevant and accurate over time. |