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Telecom churn case study using PCA and Random Forest Algorithms

Statement of the Problem: In the telecom industry, customers are able to choose from multiple service providers and actively switch from one operator to another. In this highly competitive market, the telecommunications industry experiences an average of 15-25% annual churn rate. Given the fact it costs 5-10 times more to acquire a new customer than to retain an existing one, customer retention has now become even more important than customer acquisition. So for reducing customer churn, telecom companies need to predict which customers are at high risk of churn.

Business Goal: In this project, you will analyze customer-level data of a leading telecom firm, build predictive models to identify customers at high risk of churn and identify the main indicators of churn using pca and random forest techniques. In this project I have used python language to perform exploratory data analysis, data cleaning, data visualization, pca, logistic regression modelling, support vector machine modelling, tree regression modelling, hyperparameter tuning, random forest technique and xgboost algorithm to predict which customers would churn.

Recent Publications

1. Akshay Kriplani, Shruti Pandit, Arun Chawla, Jean J. M. C. H. De la Rosette, Pilar Laguna, Suraj Jayadeva Reddy & Bhaskar K. Somani Neutrophil–lymphocyte ratio (NLR), platelet–lymphocyte ratio (PLR) and lymphocyte–monocyte ratio (LMR) in predicting systemic inflammatory response syndrome (SIRS) and sepsis after percutaneous nephrolithotomy (PNL), Urolithiasis volume 50, pages341–348 (2022)
2. Sunil Pillai ,Akshay Kriplani,Arun Chawla ,,Bhaskar Somani,Akhilesh Pandey ,Ravindra Prabhu1,Anupam Choudhury ,Shruti Pandit ,Ravi Taori 1ORCID andpadmaraj Hegde ,Acute Kidney Injury Post-Percutaneous Nephrolithotomy (PNL): Prospective Outcomes from a University Teaching Hospital, J. Clin. Med. 2021, 10(7), 1373
3. Akshay Kriplani, Deep Jain, Mayank Kulshreshtha, Suraj Jayadeva Reddy, Shruti Pandit,Bathi Sourabh Reddy, Gurvansh Singh Sachdev,Vivekanand Kedarlingayya Hiremath, Arun Chawla, Urinary bladder paraganglioma: a clinical dilemma in diagnosis and management: our experience at a tertiary care center, pissn 2320-6071 | eissn 2320-6012

Biography

Shruti Pandit is currently working as a senior director at internet travel solutions. She has keen interest and has done many certifications in agile, devops, aws cloud, blockchain and aiml. She is currently pursuing her masters from liverpool john moore's university, London in artificial intelligence and machine learning. She has built a lot of AIML models in various domains like Marketing, Telecom, Aviation etc. She is a Kaggle expert and holds a rank of 1553 in Notebook Expert category amongst 2,31,982 Kaggle Experts around the world. She is a regular speaker at AIML, agile, devops, cloud and data science conferences. You can find her projects in below links.

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