

Raktim Mukhopadhyay

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Education

- **Ira A. Fulton Schools of Engineering, Arizona State University, USA**
Master of Science in Computer Science, Aug 2019 - Present, GPA – 3.78/4
Coursework: Statistical Machine Learning, Data Visualization, Applied Cryptography, Data Mining, Natural Language Processing
- **Government College of Engineering and Ceramic Technology, India**
Bachelor of Technology in Computer Science & Engg, Aug 2015 – May 2019, GPA – 9.61/10
Coursework: Natural Language Processing, Artificial Intelligence, Compiler Design, Distributed Computing Systems, Database Management Systems, Software Engineering, Information and Coding Theory

Certificates

- **Neural Networks and Deep Learning, Course offered by Deeplearning.ai, Jan 2020**
 - **Certificate:** <https://cutt.ly/neural-networks>

Projects

- **Visualization & Analysis of Twitter Streams, Arizona State University, Sep – Nov 2019**
 - Developed an interactive visual analytical tool using D3js to leverage information gathered from tweets by providing a range of intuitive and user-friendly interactions.
- **K-Means Clustering using Python, Arizona State University, Oct 2019**
 - Implemented K-Means clustering from scratch using two strategies: First strategy - Initial centroids are chosen randomly Second Strategy - The first centroid is chosen randomly, for the i -th centroid - a data sample is chosen among all possible data samples such that the mean distance of this chosen sample to all previous ($i-1$) centres is maximum
- **Classification using Neural Network, Arizona State University, Nov 2019**
 - Classification task on MNIST dataset using Convolution Neural Network
 - Classification Accuracy – 97.81%
- **Detection of Fraudulent Financial Transactions, Globsyn Finishing School, Jul 2018**
 - Applied different classification algorithms such as Logistic Regression, Decision Tree, Naive Bayes, Random Forest, KNN, XGBoost over an imbalanced synthetic financial dataset developed by Paysim having over 6.5 million financial transactions.
 - Logistic Regression was the best-suited classifier with a recall value of 0.72 and AU-ROC value of 0.95
- **Exploiting Vulnerabilities in Remote System, Indian Cyber Security Solutions, Jul 2017**
 - The project focused on exploiting the Microsoft Windows SMBV1, Server Service and PowerShell Alphanumeric Shellcode Injection, VNC Injection attacks on remote PCs.

Dissertation

- **Study of Resource Allocation using Reinforcement Learning based Call Admission Control (CAC) Protocol and Churn Prediction in Telecom Industry**
 - Centralized Resource Allocation where convex maximization formulation for optimal resource allocation in wireless networks is proposed. Also proposed an alternative approach to solve channel assignment problem using Q-Learning. Used predictive analytics to predict customer churn using classification algorithms such as: Logistic Regression – SMOTE, Decision Tree, Light GBM and XGBoost.
 - Logistic Regression – SMOTE has the highest Kappa value of 0.47 and an accuracy of 0.80.

Technical Skills

- **Programming Languages** – Java, C++, C, Python, SQL, HTML, JavaScript, CSS
- **Tools** – Git, Tableau, D3js, PyData Stack, Plotly, TensorFlow

Responsibilities and Co-Curricular Activities

- Volunteer National Service Scheme (NSS – Social Service) India, May 2016 – Feb 2019
- Secretary of Tech Club, Govt. College of Engg. & Ceramic Tech, India, Oct 2017 – Dec 2018
- Member of College Governing Council, Govt. College of Engg. & Ceramic Tech, India, Nov 2017 – Jan 2019
- Representative of Dept. of Computer Science and Engineering in Career and Skill Development Committee, Govt. College of Engg. & Ceramic Tech, Jul 2017 – May 2019