Vazgen Tadevosyan

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EXPERIENCE

ROCHESTER INSTITUTE OF TECHNOLOGY *Jan 2023 – present*

Research Assistant

- Conducted research on machine learning in cybersecurity and examined the impact of imbalanced data on the performance of intrusion detection systems
- Proposed solutions to address the imbalance problem including undersampling/oversampling using SMOTE
- Used preprocessing techniques, including PCA, and applied clustering techniques, such as DBSCAN to merge minority classes

PLAT.AI *May 2022 – Aug 2022*

Data Science Intern

- Recommending a set of attributes that would maximize the model's accuracy with statistical analysis
- Found the clients who will likely repay loans by using random forest and logistic regression models with 0.85 AUC score
- Developed Machine Learning deployment pipeline using Docker and REST API, thus automating the data preprocessing, data cleaning, and feature extraction and optimizing prediction in real time

BETCONSTRUCT *Sep 2019 – Aug 2021*

Machine Learning Engineer

- Reduced traffic load by 30% by finding sessions with not-human like behavior applying Hierarchical clustering methods
- Applied supervised tree-based models such as XGBoost and Random Forest to predict bots with an accuracy of 93%
- Data Analysis of user sessions using Elasticsearch and Kibana, provided reports on user groups overloading the network traffic

AMERICAN UNIVERSITY OF ARMENIA *Jul/2019 - Jun/2020*

Teaching Associate of Programming for Data Science Courses

- Created a set of code slides and problem sets as extracurricular materials for Programming for Data Science Course
- Assisted students in building Shiny dashboards and optimizing codes for their course projects using Python and R
- Led problem-solving sessions with classes of more than 30 students and organized additional office hours to discuss topics

ARMENIAN NATIONAL SDG INNVATION LAB (UNITED NATIONS) *Feb/2019 May/2019*

Data Science Intern

- Extracted over 100,000 tourist reviews about Armenia using data extraction tools
- Topic Extraction and Sentiment Analysis using NLP tools, supported the team in the developing the Travelinsights.ai
- Presented the discovered tourist-related discovered problems in different fields to the Tourism Committee of Armenia

EDUCATION

ROCHESTER INSTITUTE OF TECHNOLOGY Rochester, NY

MS in Data Science *May 2023*

- **Key Coursework**: Deep Learning, ML in Cybersecurity, Software Engineering for Data Science Database Design and Implementation, Applied Statistics, Natural Language Processing
- **Capstone:** Automotive part prediction using Siamese Network and Yolo architecture
- Honorary recipient of the Fulbright Foreign Student Scholarship Grant

AMERICAN UNIVERSITY OF ARMENIA Yerevan, Armenia

ME in Industrial Engineering and Systems Management *May 2019*

- **Key Coursework**: Machine Learning, Data Scraping, Business Analytics, Data Mining and Predictive Analytics
- **Capstone Project**: Used web scraping tools to get more than 60k automobile listings, conducted market analysis and built Shiny app and ML models to estimate car prices and probability of them being sold

PROJECTS

Dialogue and Text Summarization on SAMSUM, XSUM datasets: Developed a text/dialogue summarization project utilizing BART and PEGASIS transformers pre-trained models. Conducted initial text processing and fine-tuned the weights of model and improved performance Deployed the models using Hugging Face for implementation

Refining Duplicate Contribution Detection in Pull-Based Projects: Implemented a duplicate contribution detection algorithm in pull-based projects by calculating cosine similarity of code changes, titles, and descriptions of pull requests. Optimized the algorithm using recall-rate method for efficient duplicate detection results

Lyrics Analyzer and Song Adviser using Machine-Learning in Python: Preprocessed 7000 songs text data using NLTK, TextBlob and used TF-IDF for feature extraction and Naive Bayes classifier implementation. Developed a song recommendation program using Selenium and sentiment analysis based on user's mood and preferred genre

SKILLS

Deep Learning: Convolutional Neural Networks, Recurrent Neural Networks, LSTMs, Transformers, Dropout, Batch- Norm, Xavier/He initialization

Statistical Methods: Regression (Linear, Time-Series, Logistic, Ridge, Lasso, Elastic Net), Decision Tree based models Hypothesis Testing, A/B testing, SVM, PCA, LDA, k-NN, K-means Clustering, Conjoint Analysis

Software & Programming: R, Python (pandas + NumPy + Tensorflow+Pytorch), JAVA, Git, Linux, Docker, RestAPI, FastAPI