Rutuja Mahajan

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EDUCATION

MASTER OF SCIENCE IN COMPUTER ENGINEERING **DECEMBER 2019**
WRIGHT STATE UNIVERSITY, DAYTON, OHIO

- Expertise: Data Science · Minor: Statistical Analysis · GPA: 3.86
- Related coursework: Data Science, Machine Learning, Soft Computing, Empirical Analysis in Literature Review, Distributed Computing, Advanced Computer Networks, Embedded Systems

BACHELOR OF ENGINEERING IN INFORMATION TECHNOLOGY **MAY 2015**
G. H. RAISONI COLLEGE OF ENGINEERING, NAGPUR, MAHARASHTRA

- Minor: Marketing Management · GPA: 3.65
- Related coursework: Data Structure, Database Management System, Theory of Computation, Language Processor, Graph Theory and Computation, Engineering Mechanics, Engineering Economics and Industrial Management, Economic Engineering in Marketing Management, Human Computer Interaction, TCP-IP.

TECHNICAL SKILLS

- Programming Languages: R, Python, C, C++, PHP, HTML, embedded C, Verilog
- Frameworks: RStudio, Spyder (python 3.5), Microsoft Azure, Weka, Alteryx, SAS, SPSS, Google Cloud Platform, Alteryx, Tableau, Hadoop, SQL
- Data Processing Tools: Latex, Microsoft Office, Kutools
- Key Skills: Advanced Machine Learning, Deep Learning, Data Visualization, Text Analysis, Sentiment Analysis, Data Manipulation, Data Analysis, Feature modeling, Statistical techniques, Hypothesis testing, A/B testing.

CERTIFICATIONS

- Java
- Machine Learning with Python and R
- Deep Learning
- Advanced Networking
- Statistics with R
- Artificial Intelligence
- Reverse Engineering
- NLP and Text Mining
- Computer Vision

RELEVANT EXPERIENCE

GRADUATE RESEARCH ASSISTANT | WRIGHT STATE UNIVERSITY | MAY 2019 – PRESENT
ANALYZING PUBLIC VIEW TOWARDS VACCINATION USING TWITTER

- Harvested over 8 million tweets streamed on twitter for a year using API's to analyze public behavior on vaccine.
- Presented a framework of 2-stage classifier to identify relevant tweets and categorize as public outlook.
- Extracted emotions and sentiments as features along with n-grams for supervised machine learning algorithms.
- Analyzed emotions elicited through the time using Multivariate analysis of variance
- Platform: R, Kutools Plus, Tableau.
- Techniques: Data Mining, Text Analysis, Vector Space Modeling, Latent Dirichlet Allocation, Sentiment Analysis, Latent Semantic Analysis, N-grams generator, Regression Algorithms, Support Vector Machine, Neural Networks, Gradient Boosting Tree, MANOVA.
- Presented study at The College of Science and Mathematics Festival of Research – 2019

MACHINE LEARNING TECHNIQUES TO PREDICT MILD COGNITIVE IMPAIREMENT USING DATA FROM A WERABLE SENSOR DEVICE

- Gathered data from elderly participants using Hexoskin vest with sensors measuring acceleration, cadence abdominal and thoracic respiration, minute ventilation, breathing rate, electrocardiography and heart rate while performing a short physical performance battery walk.
- Applied regression techniques to predict Montreal Cognitive Assessment scores.
- Applied classification techniques to determine existence of cognitive impairment in participants.
- Platform: Python
- Techniques: Convolution Neural Networks, Support Vector Regression, Hyperparameter tuning using Optunity

RESEARCH ASSISTANT | WRIGHT STATE UNIVERSITY | JANUARY 2018 – AUGUST 2018
MEASURING SCIENCE TEACHERS' EMOTIONS AROUND EVOLUTION WITH REAL WORLD SCENARIOS

- Developed an instrumentation to measure teachers' emotional experiences around evolution: Evolution Emotion Assessment with Real-World Scenarios (E-EARS).
- Created a survey containing 4 pro-evolution and 8 anti-evolution scenarios from real-world occurrences for High School Science teachers.
- Annotated the response on survey on a 5-point ordinal scale for the seven emotions and were validated using Rasch partial credit model.
- Derived three clusters of teachers': Pro-evolution, Anti-evolution and Regret over Anti-evolution events based on unsupervised machine learning techniques.
- Platform: SPSS, R, Weka.
- Techniques: Imputation, Exploratory Factor Analysis, Principal Component Analysis, Decision Trees, Rasch, Clustering, Data Visualization
- Presented study at Symposium of Student Research, Scholarship and Creative Activities -2018
- Presented study at The College of Science and Mathematics Festival of Research – 2018

SALES FORECASTING

- Predicted the sales for stores while acquiring data from Kaggle with 1 million entries of business-related features.
- Employed data preprocessing techniques and data exploratory analysis to identify relationship between features.
- Tested assumptions of regression while applying feature selection methods to identify significant features.
- Platform: R, Python, Weka
- Techniques: Entropy gain, Feature engineering, Forecasting, Linear Regression, Random Forest, Gradient Boosting Regression, ANOVA, Sequential Sum of Squares, Marginal Sum of Squares

ADDITIONAL EXPERIENCE

- Graduate Teaching Assistant for Digital System Design | Wright State University | August 2018 – April 2019
- Peer Mentor | Wright State University | May 2017 – December 2017
- Discovery Instructor for Physics and Computer Aided Programs | Wright State University | May 2017- July 2017

PUBLICATIONS

- Mahajan, R., Romine., W., Miller., M., & Banerjee., T. (2019). Analyzing Public View towards Vaccination using Twitter. *Proceeding from the IEEE International Conference on Big Data (IEEE Big Data 2019).* Los Angeles, CA.

PRESENTATIONS

- Romine, W., Mahajan, R., & Todd, A. (September 2018). Measuring science teachers' emotions around evolution using real-world scenarios. Presentation at the Three Rivers Evolution Event (TREE), University of Pittsburgh.
- Romine, W., Mahajan, R., & Todd, A. (March 2019). Measuring science teachers' emotions around evolution using real-world scenarios. Presentation at the NARST 2019 Conference.
- Mahajan, R., Tarvekar, M., Rokde, S. (October 2014). Implementation of Android Application for Search Missions, Presentation at National Conference on Recent Trends in Information Technology.
- Guest Speaker for Machine Learning at G.H. Raisoni College of Engineering.

ACCOMPLISHMENTS

- Graduate Excellence Award for Master's in Computer Science and Engineering (2019)
- Catherine Queener Award for Outstanding Collaboration (2018)
- Recipient of 3 gold medals for outstanding student performance for three consecutive years (2013, 2014, 2015)