

Pooja Rani, Ph.D.

RESEARCH INTEREST

Computational Modeling, Data Science, Genomic Statistical, Biostatistics, Genetic Algorithm, Neural Network, Statistical modeling, Optimization.

EDUCATION

Post Graduate Data Science and Business Analytics February- currently, 2022

Specialization -Machine Learning, Ensemble Techniques, Model Tuning
University of Texas, Austin

Texas, USA

Genomic Data Science Specialization April, 2022

Specialization -Machine Learning, Ensemble Techniques, Model Tuning
Johns Hopkins University Baltimore

Maryland, USA

Python in Machine Learning May 2022

Great Learning Academy

PhD in Computer Science and Engineering September, 2019

Specialization - Software Reliability, Soft Computing
National Institute of Technology

Puducherry, India

WORK EXPERIENCE

Ad-Interim Assistant Professor, Texas A&M Commerce, TX

September 2022- currently

Commerce, TX

- Taking Data Structure theory and Lab, Artificial Intelligence, Data Analysis & Visualization and Database System for master students.

Research Project- The University of Texas Health Science Center at Tyler, TX

July 2022- currently

Tyler, TX

- Identify natural compound and liquid biomarker from combining human sample and animal models.
- Identify strategy to work with Hierarchical clustering analysis with using WGCNA -Analysis
- Unsupervised and Supervised and Validation analysis for WGCNA results

Researcher, University of Massachusetts Dartmouth

Feb 2017- April 2017

North Dartmouth, MA

- Developed hazard modeling in software reliability model in presence of imperfect debugging.
- Proposed various algorithms to find optimal solution for better fitting of software reliability modeling.
- Participated in data analysis, evaluation, and significance of testing phase during software development.

Teaching/Research Assistant, National Institute of Technology

March 2014 – October 2016

Puducherry, India

- Taught Compiler Design, Software Engineering, Java Programming, and Software Programming Labs to undergrad students

Pooja Rani, Ph.D.

- Successfully designed two-level test cases and testing hypothesis for software reliability testing using Machine learning.
- Guided and trained graduate students and undergrad students in “software estimation using Neural Network and Particle Swarm Optimization” projects.

Assistant Professor, Fairfield Institute of Management & Technology

July 2011- July 2012

Delhi, India

- Taught Software Engineering, Operating System, and Programming to undergrad students.
- Developed efforts to manage and participate in curriculum review project and online mock test.
- Created and delivered lectures and motivated students for higher studies abroad.

Techno-Commercial Assistant, Microdata Telecom India Private Ltd

November 2006- January 2009

Delhi, India

- Verified services by identifying, correcting, or escalating and recorded configuration diagram and specification
- Tested telecom equipment's including combiner, diplexer, and multiplexer
- Measured fault tolerance level of equipment's

PROJECT EXPERIENCE USING PYTHON

INN Hotels

Austin, TX

Course Supervised Learning - Classification

- Analyze the data of INN Hotels to find which factors have a high influence on booking cancellations, build a predictive model that can predict which booking is going to be canceled in advance, and help in formulating profitable policies for cancellations and refunds.

Skills and Tools: EDA, Data Pre-processing, Logistic regression, Multicollinearity, Finding optimal threshold using AUC-ROC curve, Decision trees, Pruning

ReCell

Austin, TX

Course Supervised Learning - Foundations

- Analyze the used devices dataset, build a model which will help develop a dynamic pricing strategy for used and refurbished devices, and identify factors that significantly influence the price.

Skills and Tools: EDA, Linear Regression, Linear Regression assumptions, Business insights and recommendations

E-news Express Project, University of Texas, Austin

Austin, TX

- This project used statistical analysis, a/b testing, and visualization to decide whether the new landing page of an online news portal (E-news Express) is effective enough to gather new subscribers or not. The simulated dataset has certain important metrics such as converted status and time spent on the page that will help to conclude the effectiveness of the new landing page. Apart from that, the dependence of conversion on the preferred language will also be analyzed in this project using Python language.

Skills and Tools: Hypothesis Testing, a/b testing, Data Visualization, Statistical Inference

Pooja Rani, Ph.D.

FoodHub Order Analysis using Python, University of Texas

Austin, TX

- The food aggregator company has stored the data of the different orders made by the registered customers in their online portal. They want to analyze the data to draw some actionable insights for the business. Suppose you are hired as a Data Scientist in this company and the Data Science team has shared some of the key questions that need to be answered. Perform the data analysis to find answers to these questions that will help the company to improve the business.

Skills and Tools: Exploratory Data Analysis (Variable Identification, Univariate & Bi-Variate analysis).

PUBLICATIONS

PhD Thesis: - Neuro and Swarm Optimization Techniques for Software Reliability Analysis and Modeling

- Pooja Rani, G.S. Mahapatra, Entropy based enhanced PSO on multi-objective software reliability modeling for optimal testing resources allocation, in Software Testing Verification and Reliability, DOI: 10.1002/stvr.1765, 2020.
- Pooja Rani, G.S. Mahapatra, A neuro-particle swarm optimization logistic model fitting algorithm for software reliability analysis, Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, DOI.org/10.1177/1748006X19844784,2019.
- Pooja Rani, G.S. Mahapatra, Neural network for software reliability analysis of dynamically weighted NHPP growth models with imperfect debugging, in Software Testing Verification and Reliability, 28(4), e1663, Article ID: 15015060, DOI: 10.1002/stvr.1663, 2018.
- Pratik Roy, G.S. Mahapatra, Pooja Rani, S.K. Pandey, K.N. Dey, Robust feedforward and recurrent neural network based dynamic weighted combination models for software reliability prediction, In Applied Soft Computing, 22, 629--637. (ISSN: 1568-4946), 2014.

Master Thesis: - Studying behavior of VANET under various traffic scenarios

- Pooja Rani, Performance Comparison of VANET Routing Protocols, 7th IEEE Conference WiCOM-2011.- ISBN: 979-1-4244-6251-3, 2011.
- Pooja Rani, Studying behavior of VANET in under various traffic scenario", International Journal of Computer Science Issue- 2011. July 2011 Issue (Volume 8, Issue 4): Paper IJCSI-2011-8-4-290, 2011.

SKILLS

- Programming: R, SAS, SPSS, Python, JAVA, C/C++/C#, Visual Studio.
- Application: SQL, PL/SQL Oracle Developer, MATLAB, Microsoft Office, Mathematica
- Typesetting: Lyx, Latex, MS Word; Operating System: Linux, Windows, Ubuntu