**Animesh Goyal**

[animesh.goyal9@gmail.com](mailto:animesh.goyal9@gmail.com) | 512-825-5185 | Webpage: <https://animeshgoyal9.github.io./>

**EDUCATION**

**THE UNIVERSITY OF TEXAS AT AUSTIN, USA**  May 2020

*Master of Science in Operation Research and Industrial Engineering*  **GPA: 3.72/4.00**

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI, INDIA** May 2017

*Bachelor (Hons.) of Engineering, Manufacturing Engineering*  **GPA: 3.85/4.00**

**WORK EXPERIENCE**

**UT CS - ARTIFICIAL INTELLIGENCE LABORATORY Austin, TX**

*Graduate Research Assistant, Department of Computer Science, UT Austin. June 2019 - Present*

* Working under the supervision of Dr. Peter Stone on developing an environment for implementing and testing various **multi-agent reinforcement learning** policies to study their effect on achieving pre-defined objectives
* Project involves integration of additional functionalities to several thousand lines of code in **RoboCup Rescue** simulator

**WEIR MINERALS Bangalore, India**

*Graduate Engineer Trainee Jan 2017 – Jun 2018*

* Developed and validated component scenario to reduce part tooling estimate by **20%** which resulted in the **annual savings of $730,000**
* Identified cost drivers in machine component design using the product cost management platform
* Built **Export, Transform and Load** (ETL) pipelines to integrate the tool to ERP platform
* Developed weekly report for the executives which helped discover actionable insights and **KPI’s in Tableau**

**ACHIEVEMENT**

● **Winner** of UT Austin’s Data Hack 2019 organized by Microsoft Azure, Oracle and ML-DS group at UT Austin

● Published Machine Learning articles on Medium.com which garnered more than **10k+ views**

**PROJECTS**

**DETECTING THE ONSET OF MACHINE FAILURE USING ANOMALY DETECTION METHODS**

*Algorithms applied:* ***k-Means Clustering, Isolation Forest, Auto Encoder, One-Class SVM***

* Built a model using a data-driven approach to Anomaly Detection for early detection of faults for a condition-based maintenance system
* Compared and evaluated several semi-supervised algorithms in terms of their F1 scores
* Successfully detected failures to address key issues in maintenance like safety and cost-effectiveness

**CONDITION MONITORING OF BEAM PUMP ASSEMBLY USING FASTAI LIBRARY**

* Devised a Deep Neural Network (CNN) model to predict condition of beam pump assembly using Fastai library
* Using Transfer learning, adapted **VGG16 and ResNet34** architecture to extract image features
* Successfully analyzed the potential of using Fast.ai library and achieved an accuracy of 81% on the final model

**PREDICTING CLICK-THROUGH RATE (CTR) FOR AN AD AGENCY**

*Algorithms Applied****: XGBoost, Random Forest, LightGBM, Stacking***

● Developed machine learning model to accurately predict the number of customers visiting an Ad Agency

● Analyzed and processed data using various data visualization tools like Seaborn, feature engineering tools

and performed hyperparameter tuning using Bayesian Optimizer

● **Ranked 6th** among a class of 400 students in the In-class Kaggle Competition achieving an AUC score of 0.944

**SKILLS/ COURSES**

* **Languages** Python | R | Java | SQL | MATLAB
* **Packages/ Technologies** Keras | TensorFlow | Numpy | Pandas | Plotly | Scikit-learn | SciPy | Spark |

MapReduce |Seaborn | Linux|Version Control (Git) | Tableau | Shell Scripting

* **Statistical Skills** Regression | Classification | Clustering | Dimensionality Reduction | Hypothesis Testing
* **Courses** Data Science Lab | Time Series Analysis | Linear Statistical Models | Applied Probability