

Animesh Goyal

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EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN, USA

Master of Science in Operation Research and Industrial Engineering

May 2020

GPA: 3.72/4.00

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI, INDIA

Bachelor (Hons.) of Engineering, Manufacturing Engineering

May 2017

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