ADITYA HARSH

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Computer Science and Engineering

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Summary: Computer Science student and professional Code Reviewer, interested in machine learning, artificial intelligence, and Android development. Currently building machine learning models to support various business objectives and decisions, and frequently contributing to open source communities.

ACADEMIC QUALIFICATIONS

Year	Degree/Certificate	Institute/School, City
2016	Machine Learning, Nanodegree	Udacity
2014-Present	5th semester, Computer Science and Engineering	University of Petroleum and Energy Studies, Dehradun
2013	Class XII Board (CBSE)	D.A.V Public School, Jamshedpur
2011	Class X Board (ICSE)	D.A.V Public School, Jamshedpur

RELEVANT COURSES UNDERTAKEN / ONGOING

- ALGORITHMS – I
- WEB TECHNOLOGIES THROUGH PHP
- HTML PROGRAMMING
- PROGRAMMING IN C
- ARTIFICIAL INTELLIGENCE
- MATHEMATICAL LOGIC
- DATABASE MANAGEMENT SYSYEM
- OBJECT ORIENTED PROGRAM
- MACHINE LEARNING
- OPERATING SYSTEMS
- NETWORKING
- DATA COMMUNICATION SYSTEM
- COMPUTER SYSTEM & ARCHITECTURE
- MICROPROCESSORS
- MICROCONTROLLERS
- THEORY OF AUTOMATA AND COMPUTATION

TECHNICAL SKILLS

- **Programming Languages** C, C++, Python, Java, MySQL, HTML, PHP, CSS, Javascript, Json
- **Libraries** Scikit-learn, PyBrain, Theano
- **Platform(OS)** Android, Windows Phone, Linux, Kali Linux, Microsoft Windows
- **Software** Eclipse, Android Studio, Adobe Premiere Pro, Adobe After Effects, Solid Works
- **Documentation** LaTeX

PROJECTS

SELF DRIVING CAR (MACHINE LEARNING) (July 2016)

- Developed a reinforcement learning agent for a smart cab that needs to drop off its passenger to the goal state in the shortest time possible.
- Developed an algorithm to tweak when the agent needs to explore and when it needs to exploit using the q-learning policy.
- Technologies used: Reinforcement Learning, Q-Learning, Optimization, Modeling, Model Tuning, Statistics, Algebra, Calculus, Python.

CUSTOMER SEGMENTS CREATION (MACHINE LEARNING) (June 2016)

- Reviewed unstructured data to understand the patterns and natural categories that the data fits into.
- Used multiple algorithms and both empirically and theoretically compared and contrasted their results.
- Made predictions about the natural categories of multiple types in a dataset, then checked these predictions against the result of unsupervised analysis.
- Technologies used: Clustering, PCA/ICA, Scikit-learn, feature selection, visualizing data.

Predicting Stock Market Prices (MACHINE LEARNING) (July 2016)

- Built a model to predict Stock Market prices, using a combination of Machine Learning Algorithms and the best results were obtained using SVM.
- Predicted the directional movement of stock prices for S&P 500(a commonly used benchmark for hedge funds and mutual funds) by training the model with a dataset of 5 year. The model yielded an F1 score of 66% and the portfolio vastly outperformed the SPY.
- Technologies used: Python, Scikit-learn, Pymysql.

STUDENT INTERVENTION SYSTEM (MACHINE LEARNING) (June 2016)

- Investigated the factors that affect a student's performance in high school. Trained and tested several supervised machine learning models on a given dataset to predict how likely a student is to pass.
- Selected the best model based on relative accuracy and efficiency and achieved a graduation rate of 95% from 67%.
- Technologies used: sklearn, Regression, Classification, Model Fitting, Decision Trees Regression, Neural Networks, Support Vector Machines, Naive Bayes, K-Nearest Neighbors, Python, Adaboosting

PREDICTING HOUSING PRICES (MACHINE LEARNING) (June 2016)

- Built a model to predict the value of a given house in the Boston real estate market using various statistical analysis tools.
- Identified the best price that a client can sell their house utilizing machine learning.

POSITIONS OF RESPONSIBILITY

TECHNICAL CORE COMMITTEE MEMBER, Association for Computing Machinery (ACM) (2015 - Present)

- Involved in the ACM technical core committee for the issues related to android and web developing.