UJJAWAL MADAN

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EDUCATION

AUGUST 2020 – DECEMBER 2021

MASTER OF SCIENCE IN ANALYTICS (ON CAMPUS), GEORGIA INSTITUTE OF TECHNOLOGY

- Graduate Teaching Assistant Spring 2021

- **Fall 2020:** Machine Learning, Deterministic Optimization, Data and Visual Analytics, Computing for Data Analysis
- **Spring 2020:** Design of Experiments, Time-Series Analysis, Natural Language Processing, Data Mining, Business Analytics

SEPTEMBER 2014 – MAY 2018

BACHELOR OF MUSIC IN PERFORMANCE, THE ROYAL CONSERVATORY OF MUSIC

- Michael and Sonja Koerner Full Scholarship (merit based) – 2014 to 2018
- Graduated with Distinction and Dean's List - 2018

PROFESSIONAL EXPERIENCE

AUGUST 2019 – AUGUST 2020

PROGRAMMER ANALYST, ONTARIO PUBLIC SERVICE

- Created 20+ reports for trend analyses of 28 types of loans and grants (totaling $3.5 billion) for 700,000+ post-secondary students in universities and colleges.
- Used probabilistic matching to track student pathways from schools to postsecondary to employment to continuous learning programs.
- Worked with the financial analysis group on adoption of ML predictive models' proof of concept to provide a more accurate prediction of cost per student stratified by school - helping to significantly streamline school board payments and reduce overall cost per student.

SEPTEMBER 2018 – MAY 2019

DEVELOPMENT AND DIGITAL LEARNING INTERN, THE ROYAL CONSERVATORY OF MUSIC

Rotating intern serving The Royal Conservatory of Music Development and Digital Learning. Worked extensively with the Analytics Team to create trend analyses of enrollment rates, product demand, etc.

RESEARCH AND ACADEMIC PROJECTS

U.S. DENTAL HEALTH-CARE PORTAL – ADVISOR: DR. SERBAN NICOLETTA (AUG 2020 - PRESENT)

D3.JS, HTML/CSS/JS, PYTHON, TENSORFLOW, OPENREFINE

- Heatmap of all dentists per capita in U.S. by state/county/census tract using d3.js with summary statistics.
- Non-trivial analysis to be performed to pinpoint shortage areas.
- Specifically requested by public policy professionals in government and health-care industry.

OPTIMIZING YOUR AIR-BNB LISTING – CS7641: MACHINE LEARNING (AUG 2020 - PRESENT)

SCRAPY, SELENIUM, PYTHON, PYTORCH, TENSORFLOW

Providing recommendations on how to improve listings by calculating price prediction (Sequence Models), evaluating listing photos (CNN), improving listing description (Sentiment Analysis and Entity Extraction) and recommending other stratgies for further improvement.

INDEPENDENT PROJECTS

"FULL STACK" MULTI-CLASS SENTIMENT ANALYSIS WITH DEEP LEARNING - *https://ratemyprof-sentiment.herokuapp.com/*

SCRAPY, SPLASH, SELENIUM, PYTHON, TENSORFLOW, KERAS, HTML/CSS/JS, FLASK

- Acquired Comments and Ratings from *ratemyprofessors.com* through web scraping.
- Created a Multi-class Sentiment Analysis tool with state-of-the-art deep learning models using TensorFlow and Keras.

TELEVISION SHOWS AND EPISODES D3 VISUALIZATION - *https://imdb-d3visualization.herokuapp.com/*

EXAMINING ORCHESTRAL PERFORMANCE TRENDS OF PAST 150 YEARS

ADULT CENSUS INCOME DATASET CLASSIFICATION (HARVARD CAPSTONE PROJECT)

MOVIELENS RATING PREDICTION (HARVARD CAPSTONE PROJECT)

SKILLS

Advanced Knowledge: Python • R • SQL • PowerBI • Tableau • d3.js • Scrapy • Slash • Selenium

Working Knowledge: Arena • HTML/CSS/JS • Flask • Gurobi • TensorFlow • Keras • PyTorch

Analytical Techniques: Regression • Classification • Clustering • Tree based models • Change Detection • Time Series • A/B Testing • Data Preparation • Variable Selection • PCA • Machine Learning • Deep Learning • NLP • Simulation • Deterministic Optimization • Markov Chains