



Nupur Iyer

AI Researcher

Contact

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 @nupur-iyer

Expertise

- Linear & Logistic Regression
- Predictive Modeling
- MATLAB & Image Data Analysis
- NLP
- Statistical Analysis
- Tensorflow
- Numpy

PRO Skills

- Ability to Learn
- Problem Solving
- Critical Thinking
- Written and Verbal Communication
- Creative Thinking
- Presentation Skills
- Interpersonal Skills
- Academic resourcefulness

Certifications

- Machine Learning
Stanford Online - [7JZR429J83CD](#)
Issued May 2019
- IBM Developer Skills Network -
How to build Chatbots
Cognitive Class - [CB0103EN](#)
Issued May 2020
- Secure and Private AI
Udacity - [ud185](#)
Issued June 2023
- Graduate Management
Admission Test (GMAT)
Score: 700
AWA: 5

Experience

2023 - Present
Toronto, Canada

Royal Bank of Canada (RBC)

Artificial Intelligence Consultant

Synthetic Data Engineering

A Machine Learning Specialist in the field of Responsible AI (oh the possibilities!)
Our work focusses on devising and implementing statistical techniques to learn from data without harming the privacy of individual data points.

2021 - 2022
Bengaluru, India

Deloitte USI

Associate Analyst, AI & Data Ops

Neural Network Design

- Created a Logistic regression based system to predict the severity of insurance claims, with an average accuracy of 72%
- Built a diet recommender system used to propose diet plans based on the health profile of an individual.

ML Algorithm Building

- Implemented the Gradient descent algorithm from scratch for a project within the company.
- Worked extensively with the numpy package in python to effectively build prediction models, recommender systems, and other regression-fueled algorithms.

AI Platforms

- Worked with AWS Sagemaker to create extended 3-minute melodies from 10-sec audio clips using pattern recognition in AI.
- Utilized Tensorflow for creating supervised models.

Exploratory Data Analysis

- Performed feature selection and data cleaning on a real-time insurance dataset to identify a correlation between the features/characteristics of a claim, and the amount received in return.
- Analyzed the correlation between the mental state of children and their medical history for a psychological research facility dataset.

System Optimization and Debugging

- Effectively improved NN performance by ~20% by devising a unique combination of feature scaling, NN architectural changes, and optimization libraries.
- Revamped the efficiency of a client data control system by identifying and resolving a redundancy-causing bug in the source code.

Incident Resolution

- Worked as part of the Platform Operations team for the National Australian Bank, and effectively reduced the number of incidents raised in the client system from high 200's to low, manageable 30's.
- Developed a roadmap for common incident resolution and debugging techniques for the NAB data ingestion system.

Data Migration

- Achieved above-target migration of data from PCF to an automated, client-specific curation engine, converting over 80% of all client sources to a more efficient ingestion system.

- **BASH Shell Scripting**
Udemy - [53ce07c8](#)
Issued Dec 2020
- **AWS Essentials**
Amazon Web Services
(AWS) - [3add278f](#)
Issued Dec 2020
- **Google Cloud Platform Fundamentals**
Databricks - [5f2a3229](#)
Issued Dec 2020
- **Snowflake Fundamentals**
Snowflake - [d31609aa](#)
Issued Dec 2020
- **ChatGPT Prompt Engineering**
DataCamp - [aab664b2c](#)
Issued May 2023
- **Databricks Developer Essentials**
Databricks - [625d990a187f](#)
Issued March 2022
- **Databricks Developer Foundations**
Databricks - [5349c33c462a](#)
Issued March 2022
- **International English Language Testing System (IELTS)**
Speaking: 8.5, Reading: 8.5
Writing: 7, Listening: 8

2019 - 2023
Toronto, Canada

- **Learning & Development Resource Representative**
- Connected hundreds of practitioners with industry leaders to enhance technical skills through both in-house and external vendor programs
- **Academic Projects**
 - **Variational Autoencoder (VAE) & Decoder**
- VAE applied to images of faces to predict how the face transforms over time (by age)
- Anomaly Detection applied on videos per frame
- Image cleaning and denoising using an autoencoder architecture, applied on the MNIST digit dataset
 - **Natural Language Processing**
- Sentiment Analysis on Trustpilot scraped reviews
- Tokenization and Clustering for duplicate identification and removal on Child Protection Information Network (CPIN) database
 - **Object Identification**
- Object detection dataset using a manual labeling software (label-studio)
- Finetuning of the HuggingFace DETR model for object identification to create a Candy Counter for 8 different types (different by shapes) of candy
 - **Anomaly Detection and Recommender Systems**
- Anomaly Detection system and the study and analysis of the fundamental types of Distributions applied to various datasets
- Recommender system applied to a movie ratings dataset using Collaborative Filtering
 - **K-means Clustering and Principal Component Analysis**
- K-means clustering on a 128x128 colour-image to reconstruct it into a 16x24 image compressed according to the top n colours used in the image.
- Principal Component Analysis to reduce an N-dimensional model down to 3-D followed by 2-D representations
 - **Regularized Linear Regression and Bias vs Variance**
- The study the effects of underfitting and overfitting in a Neural Network.
- Identifying ways of overcoming bias/variance in a regression system.
 - **Multi-class Classification in Neural Networks**
- Introductory analysis to Neural Networks and utilizing the fundamentals of widely used algorithms involved in Image Recognition.
- Enhancing binary logistic regression to include a dataset involving multiple target classes.

Awards & Honours

- **Applause Award 2022**
Deloitte
for exceptional work as a Python developer in ensuring qualitative client deliverables
- **Spot Award 2021**
Deloitte
for commendable work and dedication as a reliable QA analyst.
- **Skill-set Award, 2020**
DACN
First prize in a district level AI presentation competition
- **Skill-set Award, 2019**
DACN
Second prize in a state level Physics presentation seminar

Hobbies

- Creative Writing Society
- Fiction Book Club
- Astrophysics
- Content Creation (YouTube)
- Music (Guitar & Harmonium)

References

Utsav Vachharajani

Manager, Deloitte USI

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Ashish Gupta

Senior Consultant, Deloitte USI

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Bismita Biswal

Consultant, Deloitte USI

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Education

Present
Toronto, Canada

- **Schulich School of Business, YorkU**
Master of Management in Artificial Intelligence
- Schulich Artificial Intelligence Entrance Award
- YorkU Excellence Award 2023

2017 - 2020
Nagpur, India

- **Dr Ambedkar College, Nagpur University**
Bachelor of Computer Science
- Specialization: Computer Science, Physics, Mathematics and English
- Batch topper with merit scores in all subjects in the final semester
- Winner of the Dharampeth Science District Level Presentation Competition
- Lead representative of the Physics society
- Silver medal for Presentation on Raman Effect under the Vidarbha University Physics Teachers Association (VUPTA)

2015 - 2017
Nagpur, India

- **M.K.H. Sancheti Public School & Junior College, Maharashtra Board**
Junior College, Associate Degree
- Specialization: Physics, Mathematics, Chemistry, English, Computer Science and English
- Top 2 percentile with merit status in Mathematics (96%), Physics (91%) and Computer Science (grade A)
- Highest scorer entrance award