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Kartik

LinkedIn
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SKILLS

Programming	Python, R, C++, Javascript
ML Tools	Pytorch, Keras, Open AI Gym, scikit-learn, Bayesian machine learning
Other	Git, Javascript, HTML5, CSS, React, Node.js, SQL, MongoDB
Communication	English, Dogri(native), Hindi

EDUCATION

Master of Statistics with Data Science- Merit **November 2023**
University of Edinburgh, Scotland

Courses: Reinforcement learning, Machine Learning and Pattern Recognition, Statistical Programming, Incomplete data analysis, Bayesian theory, Bayesian data analysis, Probabilistic modelling and reasoning.

Bachelor of Engineering Computer Science and Engineering- 8.66/10(CGPA) **May 2021**
Panjab University, Chandigarh(India)

Courses: Quantum and statistical physics, Web development, Artificial Intelligence, Data structures and algorithms, Data mining, Modeling and simulation.

WORK EXPERIENCE

Web Development Intern
GrowVation, Chandigarh **June-July 2018**

- Led a team of four in creating the front end from the ground up, employing fundamental technologies.
- Developed the backend using Node.js and crafted the front end using Bootstrap and React.
- Utilized and enhanced skills in Bootstrap (web framework), HTML, Cascading Style Sheets (CSS), and JavaScript, React, Node.js.

Research Intern
Defence Research and Development Organisation (DRDO), New Delhi **June - July 2019**

Processing of laser-induced Fluorescence(LIF) Spectra of chemicals using Machine Learning

- In this project, we revolutionised the processing of LIF spectra(produced using the Raman effect) for chemicals by implementing supervised Machine Learning algorithms, specifically Support Vector Machines(SVMs). Our goal was to significantly curtail costs associated with traditional methods reliant on physical equipment. By automating the LIF spectrum analysis, we paved the way for more efficient and cost-effective chemical analysis processes.
- Elucidate relationships between data patterns of wavelengths of different minerals generated under control and test conditions.
- Built a Desktop application using Tkinter to give the built model a GUI(graphical user interface).
- Skills gained are Data preprocessing, Data mining, Machine learning algorithms and Python

Front of House (Part-time)

Slumdog Indian Delivered, Edinburgh

December 2023 - March 2024

- Cleaned and maintained the front-of-house area, ensuring a welcoming environment for customers.
- Handled multiple customer interactions efficiently, providing excellent customer service.
- Coordinated with delivery drivers to ensure timely and accurate food deliveries.
- Performed cash-ups at the end of each shift, ensuring accurate financial reporting.

PROJECT

Exploring anomaly detection using autoencoders(AEs) and variational autoencoders(VAEs) in network security June 2023

Master Dissertation Supervised by: Dr. Miguel de Carvalho (Distinction)

- Created a method for tuning the threshold for classifying anomalies(cyberattacks) based on the reconstruction error in AEs and VAEs with 99% recall score(sensitivity) even in highly imbalanced datasets.
- Evaluated anomaly detection performance by contrasting autoencoders (AEs) and variational autoencoders (VAEs) against conventional techniques like KNN, isolation forest, and one-class SVM.
- Interpreted the prediction of the BlackBox models(AEs and VAEs) using LIME(Local Interpretable Model-agnostic Explanations) and SHAP(Shapley Additive explanations). The important features in the datasets for detecting the anomalies(cyberattacks) are also derived.

Exploring Birds Demographics: Unraveling the Impact of Fitness, Species Interactions, and Climate Change August 2023

Master Dissertation Supervised by: Prof. Ruth King (Distinction)

- Thoroughly examined a dataset covering three passerine bird species—blackcap, chiffchaff, and robins—from the years 2007 to 2018.
- Employed the Cormack-Jolly-Seber model to evaluate apparent survival and recapture probabilities for passerine birds throughout the winter seasons from 2007 to 2018.
- Extended the application of the Cormack-Jolly-Seber model by customising it to provide separate estimates of survival probabilities for juvenile and adult birds.

ACHIEVEMENTS

- **Web Developer Bootcamp 2023 by Colt Steele (Udemy):** Expanded my knowledge in HTML, CSS, JavaScript, React, MongoDB, and Node.js.
- My team was selected for one of the World's Largest Hackathon-Smart India Hackathon 2019 Finale under the Ministry of External Affairs Government of India.
- Securing the 3rd position in the North India Cybersecurity Hackathon, an event organised by the US Embassy.
- For Undergraduate studies, awarded with a Scholarship for full 4 years for securing 8th position in the Himachal Pradesh State in 12th Board Exams.

REFEREES CONTACT DETAILS

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