

Gaurab Baral

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EDUCATION

Northern Kentucky University

Highland Heights, KY

Undergraduate in Data Science, Minor in Statistics and Biological Science

Aug. 2022 – Present

- **Relevant Courses:** Calculus, Advanced Statistics, Data Mining in Python, Data Cleaning and Visualization, Regression Analysis, Artificial Intelligence, Statistical Computing
- **Awards/Honors:** L.I.F.E Fellowship, International Merit Scholarship, President's Honor List, EDGE Award
- **Organizations:** Data Science Club, COI Ambassadors, STEM Peer Mentor, Tutoring Center

EXPERIENCE

Undergraduate Research Fellow

May 2023 – Present

Northern Kentucky University

Highland Heights, KY

- Developing Movie Recommendation Systems, exploring NLPs, Matrix Decomposition, SVDs, KNN models, SVMs, Neural Networks, and other deep learning techniques, utilizing Python libraries such as Tensorflow, Keras, and Surprise.
- Shared findings at Poster at Capitol academic symposiums and Heather Bullen research celebration.

Teaching Assistant

Jan. 2023 – Present

College of Informatics - Northern Kentucky University

Highland Heights, KY

- Assisted with INF120: Introductory Python Programming for the fall of 2023, supporting a class of 32 students by providing tutoring, grading assignments, and facilitating lab sessions.
- Supported DSC101: Introductory Data Science for the fall of 2024, aiding 26 students by helping with coursework, conducting review sessions, and grading exams.

Software Engineering Internship

May 2024 – August 2024

Headstarter-AI

Remote

- Built a full-stack web application for hosting and discovering Roblox games, incorporating AI-driven language filtering using the OPENAI 'text-moderation-007' model.
- Suggested relevant guides, YouTube videos, and Fandom information for the game the user requested, using AI and real-time data.

Data Analyst

August 2023 – December 2023

North American Stainless

Ghent, KY

- Merged multiple steel industry datasets using Pandas, performing comprehensive data cleaning tasks including duplication, anomaly detection, and correction.
- Conducted in-depth analysis on the cleaned data to derive actionable insights and provide meaningful outcomes.
- Uploaded the processed data to the designated Postgre database using SQLite3, ensuring efficient data storage and accessibility.

Professor Search Committee

Nov 2023 – March 2024

College of Informatics - Northern Kentucky University

Highland Heights, KY

- Served as the Student Representative on the Professor Search Committee responsible for searching candidates for the roles of Assistant Professor in Computer Science and Assistant Professor in Software Engineering at Northern Kentucky University.
- Reviewed resume of 50+ applicants and helped in interviewing 10+ candidates, contributing to the selection process and providing feedback.
- Lead One on One Tour sessions for the 5 selected candidates around the campus.

PROJECTS

FidelityxOpenAI Finance Bot | *Python, MERN, Redux, TensorFlow*

- * 1st position in Hackathon organized by Fidelity.
- * Utilized OpenAI's GPT-4 for personalized financial advice, learning and evolving from user interactions.
- * Recommended relevant Fidelity YouTube videos, enhancing user experience and supporting marketing strategies.

Driver Drowsiness Detection | *Python, Streamlit, OpenCV, TensorFlow*

- * Developed a real-time driver drowsiness detection system using OpenCV and TensorFlow.
- * Integrated facial landmark detection and eye-blink monitoring to identify signs of fatigue.
- * Built an interactive dashboard with Streamlit for visualizing detection metrics and results.
- * Designed the system to trigger alerts when drowsiness is detected, ensuring enhanced road safety.

Automated Indeed Job Search Tool | *Python, LangChain, Selenium*

- * Extracted up to 15,000 job data from Indeed when prompted with a job title and location.
- * Automatically saved extracted data into a structured CSV file for easy analysis.
- * Utilized LangChain and GPT-4 to analyze a person's resume and recommend the best job for them.
- * Ensured compliance with Indeed's terms of service and scraping guidelines.

Soccer Game Analysis | *Python, R, Minitab, HTML*

- * Conducted EDA on the Premier league Soccer dataset to get insights into Manchester City's performance trends.
- * Applied Multiple Linear Regression for goal forecasting of games played by Manchester City.
- * Carried out Logistic Regression to check if a team qualifies for Champions League.
- * Deployed logistic regression results in a static website for accessibility and easy reference.

TECHNICAL SKILLS

Languages: Python, Java, HTML, CSS, JavaScript, Git, R, SQL, SAS

Libraries/Frameworks: Pandas, Numpy, Matplotlib, TensorFlow, MERN, Redux, Selenium, LangChain, Flask, PyTorch, FastAPI, Docker

PUBLICATIONS

Journal/Conference Articles:

- * **Baral, G., Zhou, J.** "A hybrid Regression method for Predicting Housing Prices" *AHFE:Emerging Technologies and Business Applications*,December 2024.
- * **Baral, G., Zhou, J.** (Under Revision). "Exploring Machine Learning and Deep Learning Concepts for Enhanced Movie Recommendation Systems: A Comprehensive Analysis" *Springer:Multimedia Tools and Applications*,December 2024.

Poster Presentation:

- * **Baral, G.** (2024). "A Survey on Movie Recommendation: from a Machine Learning Perspective." In Posters at the Capitol, Kentucky .