

BHANU PRATAP SINGH

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EDUCATION

B.Sc. ARTIFICIAL INTELLIGENCE

Technische Hochschule Deggendorf

- 2022 - Present
- Grade - 2.2
- Relevant Coursework: Python Programming, Machine Learning, Data Science, Computer Vision, Statistics.

PROJECTS

AI for Trading - Ongoing

- Objective:** Training deep reinforcement learning (DRL) agents to make intelligent decisions in real-time trading environments and analyze Financial Data.
- Data collection and preprocessing:** Yahoo Finance, NumPy, Pandas, and Matplotlib
- Custom Environment** for DRL agent training - OpenAI Gym.
- DRL agents** like DQN and PPO using PyTorch as well as from stable-baselines API.
- Analyzed and backtested trading strategies using VectorBT library.
- Performed time-series analysis on stock and cryptocurrency data.
- Explored predictive modeling techniques such as ML models, LSTM, etc for sequential data.

CDSS - (Machine Learning/LLM - Streamlit)

- Objective:** Develop an AI-powered CDSS for medical diagnosis and decision support.
- Frontend:** Streamlit
- Libraries:** Scikit-Learn, TensorFlow, Joblib
- Phase 1:** Implemented symptom-based disease prediction using Machine Learning (Random Forest, Decision Trees) and Neural Networks.
- Phase 2:** Integrated a LLM to generate medical recommendations and advanced diagnosis based on patient data.

Table Tennis Analyzer - Computer Vision

- Objective:** Post-game table-tennis analysis
- Libraries:** OpenCV, Numpy
- Implemented ball detection, trajectory analysis, net collision detection, table edge detection and an automated scoring system according to the game rules.

Titanic Survival Predictor - Web Development and Machine Learning

- Objective:** Develop a Titanic Survivor Prediction web application.
- Frontend:** HTML, CSS, VueJS
- Backend:** Python, FastAPI
- Implemented machine learning models in the backend to predict whether a person would have survived in the titanic crash.
- Followed Scrum methodology across three sprints, managing tasks and resources in Jira.

Crop Recommendation - Machine Learning

- Objective:** Understand the working of various ML models and concluding why one would be better than the other.
- Data preprocessing:** Numpy, Pandas
- Exploratory Data Analysis:** Matplotlib
- Feature engineering:** Scikit Learn
- ML model:** Decision Trees, Random Forest classifier, KNN, etc.
- Used Machine Learning methodologies to classify crops and suggest best suited crop according to environment and soil conditions

SUMMARY

Motivated Artificial Intelligence undergraduate with experience in developing predictive ML/DL models, DRL agents, data analysis and web development. With over 2 years of experience in python, data science and statistical analysis, I am eager to contribute to impactful projects. My current interests revolve around time-series analysis, Deep reinforcement learning and GenAI. I am fluent in German(B1) and English(C1), which allows me to collaborate in diverse and global environments.

LANGUAGES

English

German

SKILLS

Programming and Scripting

Python

SQL

JavaScript

CSS

Git

Linux

HTML

Financial Data Analysis

VectorBT

Backtesting.py

Statsmodels

PandasTA

TAlib

Data Science and Machine Learning

Numpy

Pandas

Matplotlib

Scikit-Learn

TensorFlow

Pytorch

OpenAI Gym

Stable-Baselines3

Vector Databases

Statistics

OpenCV

Langchain

NLP

Backend and API's

FastAPI

REST API's

PostgressSQL

Cloud and DevOps

Docker

Vercel

Github Pages