



TO WHOM IT MAY CONCERN

10 August 2025

Reference for Parth Verma

I am pleased to write this letter of recommendation for Parth Verma, who recently concluded a research internship under my supervision at University College London. Parth demonstrated good focus, technical proficiency, and problem-solving capabilities throughout the project, contributing significantly to our collaborative work on predicting stock prices using advanced machine learning models and sentiment analysis.

During the internship, Parth worked on developing a novel approach to stock price prediction by integrating sentiment analysis with Long Short-Term Memory (LSTM) networks, optimized by the Sparrow Search Algorithm (SSA). He was instrumental in fine-tuning a Large Language Model (LLM) to extract sentiment from Tesla-related tweets, applying this data as an essential feature in our predictive model.

Parth was focused and efficient in collecting and preprocessing large volumes of stock-related Twitter data. He successfully implemented sentiment analysis techniques and worked diligently to optimize the model using various machine learning and bio-inspired algorithms. His structured approach to data collection, model training, and analysis resulted in meaningful insights that were included in a review paper we co-authored, titled *"Closing Price Prediction using Sentiment Analysis."*

Throughout the internship, Parth displayed good analytical thinking, attention to detail, and a keen ability to learn and apply new methodologies. He is a self-motivated researcher who quickly adapts to complex tasks and works well both independently and within a team. His ability to grasp technical concepts and contribute to research is commendable, and I am confident he will excel in any future endeavor he chooses to pursue.

I highly recommend Parth Verma for any academic or professional opportunity, and I am certain that his skills, dedication, and work ethic will make him a valuable asset.

Sincerely,

Philip Treleaven
UCL Professor of Computing