

ASTARAG MOHAPATRA

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Education

Indiana University at Bloomington

Aug 2022 -Present

Master in Data Science

GPA:4.0/4.0

Courses: Machine learning, Applied Algorithms, Portfolio Management, Equity Markets, Time Series Analysis

National Institute of Technology, Rourkela

Jun 2017 – Aug 2021

B.Tech in Mechanical Engineering (Major)

CGPA: 8.22/10.0

B.Tech in Electronics and Communication Engineering (Minor)

CGPA: 7.94/10.0

Technical Skills

Programming: Python, C++, PyTorch, sklearn, Tensorflow, R programming, HTML/CSS, Selenium, JAX, JavaScript, PostgreSQL, Portfolio Optimization Tools

Developer Tools: Kubernetes, Ray, Weights & Biases, Google Cloud Platform, Jupyter, GitHub, Docker, VS Code, MLOPs, Langchain, Llama Index, MongoDB, Redis, AWS

Experience

Columbia University, New York

Aug 2021 – Present

Remote Research Assistant for FinRL and FinRL-Meta Open Source Project Lab

Part-time

- Contributed [blog posts](#), [paper explanations](#), trading demos and bug fixes for the FinRL library. First responder in the GitHub issue section.
- Leading the development on Hyperparameter optimization using [Ray tune](#), [Optuna](#) and [Weights & Biases](#), explainability and interpretability of DRL algorithms in the financial world

Salesken, Bengaluru, India

Dec 2021 - Apr 2022

Machine learning and Reinforcement learning Intern

Internship

- Integrated end-to-end hyperparameter optimization pipeline using the [Population based algorithms](#) and [Ray library](#) resulting in an average 7% increase in accuracy for the automated sales agent model.
- Developed [politeness language classification model](#) using the hugging face library and transformer models resulting in 16% increase in F1-score compared existing organization language models
- Build microservices using Docker, Kubernetes and GCP Platform. Reduced the ready-to-release time from 2 hours to 45 mins through automation in the production pipeline .

University of Liège, Belgium

Jun 2021 – Dec 2021

Visiting Reinforcement Learning Research Intern

Remote Internship

- Developed a deep reinforcement learning trading agent in collaboration with Prof. Damien Ernst using Optuna and Stable Baselines3, resulting in 60% increase in Sharpe Ratio compared to the Industrial average benchmark
- [Analyzed](#) the integration of Google trends as a proxy for market sentiment analysis and improved the Sharpe ratio by 13% for volatile assets in Crypto-trading compared to the baselines.

Open-Source Contributions and Communities

AI4Finance foundation

- Helped to grow the community by contributing [blog posts](#), bug fixes and features on Reinforcement learning applications in finance. Currently, working on financials applications using Large Language Models.

Llama Hub for Llama Index and Langchain

- Contributed an [SEC filings loader](#) to the community for users to building financial applications using language models

Investment Management using Python and Machine learning, EDHEC Business School

- Contributed a series of [articles](#) and [projects](#) to provide insights into the course and future directions.

Investment Management Club, Kelley School of Business, Indiana University

- Volunteering at the Investment Management Club at IU to work with on using Machine learning and AI to do investment research.

Certification

- LLM101x: Large Language Models: Application through Production, Databricks
- Building LLM Powered Applications, Weights and Biases
- Deep Learning Specialization DeepLearning.AI, Coursera
- Investment Management with Python and Machine Learning, EDHEC Business School
- Reinforcement learning Specialization University of Alberta, Coursera
- DeepLearning.AI TensorFlow Developer, Coursera
- MLOPs Specialization DeepLearning.AI, Coursera