

# 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, PyTorch, sklearn, Tensorflow, R programming, HTML/CSS, Selenium, JAX, JavaScript, PostgreSQL

**Developer Tools:** Kubernetes, Ray, Weights Biases, Google Cloud Platform, Jupyter, GitHub, Docker, VS Code

**Operating Systems:** Linux, Windows, Mac OS

## Experience

### Columbia University, New York

Aug 2022 – 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.

## Publications

### ASME Journal of Solar Energy Engineering

- Paper titled [Design and Performance Analyses of Evacuated U-Tube Solar Collector Using Data-Driven Machine Learning Models](#). GitHub page for the paper implementation [here](#)
- **Authors :** [AstaragMohapatra](#)<sup>1</sup>, [P.K.STejas](#)<sup>2</sup>, [ChaturGembali](#)<sup>3</sup>, [B.KiranNaik](#)<sup>4</sup>

## Certification

- [Python and Machine Learning for Asset Management](#), Princeton University
- [Advanced Portfolio Construction and Analysis with Python](#), EDHEC Business School
- [Introduction to Portfolio Construction and Analysis with Python](#), EDHEC Business School
- [Deep Learning Specialization](#) DeepLearning.AI, Coursera
- [Reinforcement learning Specialization](#) University of Alberta, Coursera
- [DeepLearning.AI TensorFlow Developer](#), Coursera
- [MLOPs Specialization](#) DeepLearning.AI, Coursera
- [Database Design and Basic SQL in PostgreSQL](#)
- [Python for data science and Machine learning Bootcamp](#), Udemy
- [Mathematics for Machine Learning: Linear Algebra](#)
- [Algorithmic trading and Quantitative Analysis Using Python](#), Udemy