

Aayush Singha Roy

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EDUCATION

UNIVERSITY COLLEGE OF DUBLIN (UCD)

PHD | RECOMMENDER SYSTEMS

Jan. 2022 - Now | Dublin, IR

Session-based recommender systems.

Expected Graduation - 12/25

INDIAN INSTITUTE OF TECH. DELHI

MS RESEARCH | INFORMATION

TECHNOLOGY

Jun. 2019 - Oct. 2021 | New Delhi, IN

Followed the Artificial Intelligence track.

GPA: 8.64 / 10

NATIONAL INSTITUTE OF TECH. AGARTALA


BS | MATHEMATICS

Aug. 2015 - May. 2019 | Agartala, IN

Focused on Mathematics and Computing.

GPA: 8.17 / 10

LINKS

 Github: [aayushroy](#)

 LinkedIn: [aayushroy](#)

 Scholar: [aayushroy](#)

 Twitter: [aayushroy](#)

COURSEWORK

BACHELOR AND MASTERS

Advanced Machine Learning (M)

Machine Learning (M)

Data Mining (M)

Game Theory (M)

Fuzzy Logic (M)

Linear Algebra (B)

Data Structures and Algorithms (B)

Probability and Statistics (B)

Introduction to Artificial Intelligence (B)

SKILLS

PROGRAMMING

• Python

• Java

Familiar:

• C • C++

RESEARCH WORK

1. Aayush Singha Roy, Edoardo D'Amico, Elias Tragos, Aonghus Lawlor, Neil Hurley.
Don't Get Bored: Enhancing Scalability and Diversity in Session-Based Slate Recommendation
ACM Transactions on Recommender Systems (TORS)
2. Aayush Singha Roy, Elias Tragos, Aonghus Lawlor, Neil Hurley
Simulating Real-World News Consumption: Deep Q-Learning for Diverse User-Centric Slate Recommendations
In INRA Workshop of 18th ACM Conference on Recommender Systems (RecSys'24)
3. Aayush Singha Roy, Edoardo D'Amico, Elias Tragos, Aonghus Lawlor, Neil Hurley.
Scalable Deep-Q Learning for Session-based Slate Recommendation
In Proceedings of 17th ACM Conference on Recommender Systems (RecSys'23)
4. Aayush Singha Roy, Aonghus Lawlor, Neil Hurley
Modelling User Preferences using a Partially Observed Markov Decision Problem for a Reinforcement Learning Sequence-Aware Recommender
In Reveal Workshop of 16th ACM Conference on Recommender Systems (RecSys'22)
5. Aayush Singha Roy, Edoardo D'Amico, Aonghus Lawlor, Neil Hurley.
Addressing Fast Changing Fashion Trends in Multi-Stage Recommender Systems
In Proceedings of International Flairs Conference (FLAIRS'23).
6. Masters Thesis : Application of Rough sets for Rule Generation and Keyword Extraction
Pub 1: Soft Rough Set based span for unsupervised keyword extraction
Pub 2: Forecasting of Indian stock market using rough set and fuzzy-rough set based models

PROJECTS & INTERNSHIPS (DURING PHD)

MDSR LAB PHD INTERN | ADOBE - NOIDA | JUN-AUG 2024

Planning with LLMs

During my internship, I explored LLMs in Planning tasks, implementing prompting methods like CoT and ReAct, along with advanced tree-based techniques (LATS, ToT, Reflexion). I also developed an MCTS-based algorithm using a smaller fine-tuned LLM, surpassing state-of-the-art results in the ScienceWorld Environment.

H&M FASHION RECOMMENDATION | KAGGLE | FEB-MAY 2022

Recommender Systems, LightGBM, Tensorflow

Kaggle challenge sponsored from H&M (Link).

- **Final Position:** 43 over 2954 teams (**top 2%**)
- Implemented end to end recommender systems pipeline for real-world fashion recommendations (GitHub link).

WORK EXPERIENCE

GRADUATE ENGINEER

ANZ OPERATIONS & TECH. BANGALORE, IN | JUNE - DEC 2021

I was the first starting members in the ideation squad. Helped build payments playstream application to recommend training videos to employees and gamification workflow for higher employee engagement.