

Rakesh Bal

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Education

University of California, Los Angeles

Master of Science in Computer Science (GPA - 3.81/4.0)

Los Angeles, CA

2021– Jun 2023 (Expected)

Indian Institute of Technology (IIT) Kharagpur

Bachelor of Technology in Computer Science and Engineering (GPA - 9.04/10.0)

Kharagpur, India

2016–2020

Work Experience and Internships

Amazon Web Services (AWS)

San Francisco, US

Applied Scientist Intern - [GitHub](#)

Jun'22 - Sep'22

- Analysed the performance of Protein Language Models on Drug Target Interaction (DTI) prediction problem
- Obtained 20% & 12% performance improvement over two datasets compared to the baseline DTI models
- Devised ways to add Physics-based equations to existing models and published our work in an Amazon conference
- Used AWS services like S3, EC2, SageMaker, Athena and Lambda for training pipelines and dashboards

Goldman Sachs

Bangalore, India

Analyst, Engineering Division

Aug'20 - Sep'21

- Integrated two internal bug and issue tracking softwares as part of a full-stack development project
- Implemented backend features using Java and SpringBoot and frontend features using Angular and Redux
- Coordinated with end-users for the entire SDLC; deployed the project to production, used by over **10000** users

Accenture Technology Labs

Bangalore, India

Research Intern

May'19 - Aug'19

- Worked on stock price prediction using news articles and knowledge graphs (KGs) to provide domain information
- Used GCNs with events for real-world stock scenarios leading to performance improvement of 5% from baseline

University of California, Los Angeles

Los Angeles, US

Graduate Teaching Associate

Sep'21 - Present

- Led discussion sections and office hours for 100 undergrad students in CS32 and Chem 20A courses for 4 quarters

Skills

Languages: Java, Python, C, C++ JavaScript, TypeScript, Matlab, Lisp

Frameworks: PyTorch, Angular, React, Node.js, Spring, Kafka, AWS, SQL, MongoDB, OpenCV, ROS, Docker

Publications

Analysing the Extent of Misinformation in Cancer Related Tweets

[\[Link\]](#)

- Authored by **Rakesh Bal***, Sayan Sinha*, Swastika Dutta, Rishabh Joshi, Sayan Ghosh, Ritam Dutt
- 14th International AAAI Conference on Web and Social Media (**ICWSM 2020**) - (Atlanta, USA)

Two-Sided Fairness in Non-Personalised Recommendations

[\[Link\]](#)

- Authored by Aadi Swadipio Mondal*, **Rakesh Bal***, Sayan Sinha*, Gourab K. Patro
- 35th AAAI Conference on AI (**AAAI 2021**) Student Abstract and Poster Program

* - equal contribution

Relevant Projects

Autonomous Underwater Vehicle (AUV), IIT Kharagpur

[\[Link\]](#)

- Implemented real-time underwater buoy detection using MobileNet and made inference of models lightweight
- Used ROS packages like Actionlib and Smach to implement the Mission Planner Stack of the underwater robot

CLIP for Visual Question Answering (VQA)

[\[Link\]](#)

- Worked on leveraging OpenAI [CLIP](#) in existing VQA models like MCAN in both zero-shot and finetune settings
- Used Language Driven Semantic Segmentation for answering number-based questions in the VQA 2.0 dataset

Achievements

- Awarded B-Certificate in drill and weapon training in National Cadet Corps (NCC) Aug'18
- Secured All India Rank 265 (amongst 200,000 candidates) in IIT-JEE Advanced 2016 Jun'16
- Secured 5th position in District Level Chess Championship held at SCS College, Puri Jan'10