Raahul Singh

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Dehradun | London

EDUCATION

IIIT SRI CITY

BTech in Computer Science and Engineering
Cum. GPA: 8.43 / 10
August 2018 - 2022 | India

ST. JUDE'S SCHOOL

Grad. May 2017 | Dehradun, India

LINKS

Website: **raahulsingh.net**
Github: **Raahul-Singh**
GitLab: **rasalghul2**
LinkedIn: **raahulsingh42**

COURSEWORK

UNDERGRADUATE

- Advanced Deep Learning and Neural Networks
- Artificial Intelligence and Machine Learning
- Object-Oriented Programming and Software Design
- Information Retrieval and Search Systems
- Service-Oriented Architecture and Application Development

SKILLS

PROGRAMMING

Python
Frameworks:
PyTorch • NumPy
Pandas • SunPy
Tools:
Git • Bash

PUBLIC SPEAKING

English Debate

- Won First Prize in International English Debate QUANTA (2016) among speakers from 33 countries at City Montessori School, Lucknow, India
- Accumulated over 7 years of competitive debating experience in Inter-School and District-level English Debates

RESEARCH AND ENGINEERING EXPERIENCE

PHAIDRA

Staff AI Research Engineer
August 2020 - Present

- Led product research and implementation of Phaidra's flagship Analytics and Observability conversational system: **Prism**
- Designed and implemented an end to end interactive platform for monitoring and analyzing all production models and agents for performance and biases, giving insights to Domain Experts for reliable support.
- Developed and implemented causal inference techniques to reduce bias in machine learning models, improving model fairness and reliability.
- Designed data-agnostic frameworks for incorporating domain knowledge into deep neural networks, resulting in more interpretable and physically consistent models.
- Built comprehensive ML observability pipelines and domain-specific performance monitoring systems to ensure model reliability in production.
- Engineered solutions for large-scale decision problems with complex action spaces, optimizing computational efficiency and decision quality.
- Led cross-functional collaboration between Research and Engineering teams to successfully deploy cutting-edge research into production systems.
- Achieved 15x improvement in time series prediction accuracy while reducing data requirements by 30x, successfully extending prediction horizons to 2x and 3x variables.

GOOGLE SUMMER OF CODE '20 @ SUNPY (OPENASTRONOMY)

Student Developer
May 2020 – July 2020

- Developed machine learning models to forecast solar flare probabilities from Active Region data, improving prediction accuracy and reliability.
- Engineered a Search Events object for seamless querying and matching data across HFC, HEK, and HELIO astronomical databases.
- ***Link to an overview of deliverables.***

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE

Machine Learning Intern @ The Biotech Department
May 2019 - July 2019

- Under the guidance of **Dr. Debabrata Sircar**, developed and implemented machine learning algorithms to predict fruit shelf-life using biochemical sensor data, achieving significant accuracy improvements.
- Conducted comprehensive analysis of fruit volatile chemicals to identify key biological parameters affecting post-harvest storage and nutritional quality.

PATENTS

DETERMINISTIC INDUSTRIAL PROCESS CONTROL

US20250021061A1 (Jan 2025)

- Co-invented and developed novel control systems for deterministic thermal constraint control, resulting in a published patent application assigned to Phaidra Inc.