RAJAT KUMAR

NLP Researcher

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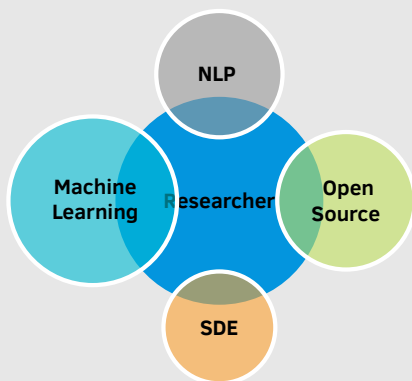
in /in/rajat-kumar-543b8a12b

⌨ rajat-tech-002

Technical Skills

Overview

Programming

$0\ LOC \longrightarrow 5000\ LOC$

Python • C • C++

Pytorch • Keras

Java • SQL • CSS • HTML • JavaScript

Education

M. Tech, ICT (CGPA: 8.18)
Specialization: Machine Learning
Dhirubhai Ambani Institute (DA-IICT)
2018 - 2020 | Gandhinagar, India

B. Tech CSE (CGPA: 7.21)
Gurukul Kangri University
2013 - 2017 | Haridwar, India

Intermediate/+2 (Percentage: 94.8%)
High School (Percentage: 95%)
Lord Mahavira Academy
2010 - 2013 | Saharanpur, India

Experience

Sep 2020 - Present

Researcher - TCS Research and Innovation Labs

- Currently working in Natural Language Processing Group (Sub-group of Deep Learning and AI Group)
- Working on real life industry problems that deal with conversational agents.
- End term goal is to create a Proof of Concept (in terms of a patent or a white paper) for further integration.

May 2019 - Jul 2019

Summer Research Intern - IIT Gandhinagar

- Guide: Dr. Nipun Batra (Assistant Professor at IIT-GN)
- Worked on project NILMTK (Non-Intrusive Load Monitoring Toolkit), an open source toolkit on GitHub which focuses on providing a better interface for energy disaggregation problems.
- Tools: Google-Colab, Python, Jupyter Notebook, GitHub
- Published a paper in ACM Buildsys 2019.
- Upgraded the NILMTK library in GitHub.

May 2016 - Jul 2016

Summer Intern at Raman Classes, Roorkee

- Guide: Dr. Ankush Mittal (PhD. at NUS Singapore)
- Worked on Research Based Projects.
- Understood basic ML and Statistics.

Projects

Jan 2020 - June 2020

Modeling Performance and Power on Disparate Platforms (Open Source)   GitHub Link

- Focused on prediction of performance and power given the CPU architecture and memory features using transfer learning.
- Worked under the supervision of Prof. Amit Mankodi and co-supervised by Dr. Amit Bhatt(Associate Professor at DA-IICT).

May 2019 - Jul 2019

NILMTK Contrib Library (Open Source)   GitHub Link

- Created a high level API in nilmtk-contrib (GitHub) which runs Disaggregation algorithms as an addition to NILMTK toolkit.
- Focused on Energy Dis-aggregation Algorithms like Denoising Autoencoder, RNN, LSTM & some Classic algorithms.

Jan 2019 - Mar 2019

Customer Support Chatbot   GitHub Link

- Guide: Dr. Prasenjit Majumdar (Associate Professor at DA-IICT)
- Conversational bot which solves user queries using sequence to sequence models like LSTM.
- Understood basic NLP and IR Techniques.

May 2020 - Jun 2020

Web Application using React JS   GitHub Link

- Learnt React JS Framework.
- Created Fully Responsive Web Application Template Suitable for Startups.

Publications

- **Towards reproducible state-of-the-art energy disaggregation**. In Proceedings of the 6th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys '19). ACM, New York, NY, USA, 193–202.
  Paper Link

- **"Image based Indian monument recognition using convoluted neural networks"** 2017 International Conference on Big Data, IoT and Data Science (BID), Pune
  Paper Link

- **"Evaluating Machine Learning Models for Disparate Computer Systems Performance Prediction"** 2020 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)
  Paper Link

- **"Cross-Platform Performance Prediction with Transfer Learning using Machine Learning"** 2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT)
  Paper Link

- **Book Chapter (Springer) - "Modeling Performance and Power on Disparate Platforms using Transfer Learning with Machine Learning Models"** International Conference on Modeling, Simulation and Optimization CoMSO 2020
  Paper Link

Recent Reviews

- Asian Journal of Probability and Statistics (ISSN- 2582-0230)

- The Eleventh International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (Energy 2021 IARIA)

Position of Responsibility

- Teaching Assistant, DA-IICT ; Subject Taught: Algorithms

- Mentor at Raman Classes, Roorkee ; Addressed queries related to Gate Subject

Achievements

- GATE EXAM AIR (2017): 3,301 ; JEE MAINS AIR (2013): 24,236

- Merit Certificates and Gold Medals in X and XII.