# Rachna Ramesh

rachna-r.github.io Github: Rachna-R
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## EDUCATION

**EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/e)**
**THE NETHERLANDS**
MS, Data Science & AI
2023 - 2025*

**UNIVERSITY OF KERALA, INDIA**
Bachelor's, Computer Science
2014 - 2018
CGPA: 8.51/10

## SKILLS

**LANGUAGES**
Python • C++ • Java

**CLOUD**
Docker • Podman

**TOOLS**
Postman • Git • Jupyter

## COURSEWORK

Research Topics in Data Mining
Foundations of AI
Foundations of Process Mining
Neural Networks
Graph Theory

## AWARDS

**HIGH PERFORMANCE IN PRODUCT DEVELOPMENT** | July 2022
Received recognition from RRD Leadership for performance and for creating a new revenue stream for RRD.

**EMPLOYEE OF THE QUARTER** | Q2 2021
Awarded from over 1500 employees by RRD.

**MERIT SCHOLARSHIP RECIPIENT** | 2015
Received from All India Council for Technical Education (AICTE).

## INDUSTRY EXPERIENCE

**R.R DONNELLEY** Aug 2019 – Jul 2023
AI Engineer, Emerging Technologies Chennai, India

- Utilized Deep Learning techniques and leveraged software engineering principles to conceptualize, design, and implement innovative solutions.
- Actively contributed to the development of Proof of Concepts (PoCs) and Minimum Viable Products (MVPs),in a dynamic team environment, blending theoretical knowledge with hands-on expertise for tangible outcomes.

**QUEST GLOBAL** Dec 2018 - May 2019
Machine Learning and Data Analytics Intern Trivandrum, India

- Worked independently to extract insights from building operational data.
- Investigated various machine learning (regression) algorithms and concepts of neural networks (RNN) to predict electricity bills and suggestions for improving the efficiency of various systems.

## SELECTED WORK PROJECTS - THE_LOFT AT RRD

**DOCUMENT LAYOUT ANALYSIS** | *Python*

- Enhanced automation efficiency, increasing the automation percentage of the manual remediation process to 65%, and then to over 78%, by creating a production grade tool currently being used across the organization.
- Researched and implemented LayoutMv3, specializing in multimodal document analysis, using the already tagged PDF documents.
- Previously trained models like Document Image Transformer (DiT using R-CNN and Cascade R-CNN from Microsoft), Detectron2 (FAIR) and YOLOv4 using the Publaynet dataset to identify the different elements of a PDF document.

**NAMED ENTITY RECOGNITION AND ENTITY LINKING** | *Python*

- Developed a chatbot based solution as part of a system to transform the current manual workflow to a completely automated workflow to retrieve financial documents of listed companies.
- Applied transformer based language models (like BERT, LUKE) to accurately identify multiple entities from a set of unstructured domain-specific data and link them.
- Optimized several language models (like BERT, RoBERTa) for performing the QA task (trained on SQuAD 2.0 dataset) to identify key entities from a user-given context as a PoC.

**SEMANTIC SEARCH** | *Python*

- Worked on a Knowledge Repository Platform employing Sentence-BERT (sentence-transformers).
- Demonstrated a better approach to improve the relevance of answers for queries, replacing the existing keyword-based search with contextual search for a set of domain-specific data.