



## PRAKHAR RATHI

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**Nationality:** Indian

**Family Status:** Single

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## WORK EXPERIENCE

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### Software Engineer, CS Group-Germany GmbH, Darmstadt

05/2022 – Present

- Contributing to the development of Ground Station Monitoring and Control software (GSMC-CC) for European Space Agency Tracking Network ground-stations.
- Programmed various components on top of European Ground Systems – Common Core (EGS-CC) kernel and devised unit tests.
- Coded synchronized deployment of GSMC-CC on multiple machines.
- Supported a team member during their training.
- Demonstrated and presented GSMC-CC and individual components on various occasions.
- Participated in the requirements specification phase for several components and documented the implementation in the software design document.
- Tech Stack: Java, OSGi Framework, JAXB, XML, XSD, Groovy, Shell scripts, Docker, Grafana.

### Research Assistant (Secure Java Software Development), Fraunhofer IEM, Paderborn

05/2021 – 03/2022

- Developed a user-centric full-stack web application with the team and containerized the application along with the MySQL database.
- Generalized the deployment process for generating multiple application repositories, cutting down the process to a single stage in the Continuous Integration (CI) pipeline.
- Planned, modified, and programmed vulnerabilities in the code and implemented unit tests.
- Coordinated software documentation of implemented features and vulnerabilities.
- Tech. stack: Java, Spring Boot, REST API, Junit, Mockito, SQL queries, MySQL database, Java Persistence API (JPA), Thymeleaf, HTML, CSS, Shell scripts, Python, Docker, Git, GitLab CI Pipeline.

### Project Engineer, Wipro Limited, Bengaluru, India

07/2018 – 02/2019

- Worked with software development and testing team members to design and develop robust solutions to meet client requirements for functionality, scalability, and performance.
- Modularized and updated old code bases to modern development standards with clean code that is easy to understand, operate, and test.
- Tech. stack: Java, JavaScript, Android, HTML, CSS, Python, REST API, MySQL.

## EDUCATION AND TRAINING

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### Master of Science (M.Sc.) in Computer Science

Universität Paderborn, Germany

10/2019 – 03/2022

Specialization – Software Engineering

Final Grade – 2.2

**Thesis:** Automated Cell Header Generation for Machine Learning Jupyter Notebooks at Heinz Nixdorf Institute, Paderborn

Thesis Grade – 1.7

Thesis tasks:

- Extended a Python static analyzer to generate call graphs with cell-sensitive call site identification for Jupyter notebooks, line-sensitive call site identification for Python source files, and external library calls.
- Programmed unique software to annotate input Jupyter notebook'' code cells with corresponding Machine Learning phases as headers in preceding markdown cells.
- Established a benchmark suite with over 120 Python programs to test the extended static analyzer.
- Fetched Jupyter notebooks from Kaggle programmatically and created another benchmark to assess software'' performance on real-life notebooks.
- Tech. Stack: Python, Jupyter Notebooks, LaTeX.

#### **Seminars:**

- Learning to Sort (Machine Learning), Grade – 2.3.
- ERNIE: A Continual Pre-training Framework for Enhanced Language Representation (Recent Advances in Natural Language Processing), Grade – 1.3.

#### **Bachelor of Technology (B.Tech.) in Computer Science and Engineering**

Dr. A.P.J Abdul Kalam Technical University, India

08/2014 – 06/2018

- Built strong fundamentals in Data Structures, Principles of Programming Languages, Relational Database Management Systems, Design and Analysis of Algorithms, etc.
- Participated in IT clubs and contributed to various programming tasks and projects.
- Volunteered for maintaining security with a team during inter-college techno-cultural events held in the institute.

#### **Industrial Training in Java – J2EE**

Aptron Solutions Private Limited, Noida, India

07/2017 – 10/2017

- Contribute to Java – J2EE programming tasks.

#### **Training in Java – J2EE**

Ducat Noida, India

12/2016 – 04/2017

- Received in-depth training in object-oriented programming (OOPS).
- Contributed to Java projects.

#### **PROJECTS**

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##### **VARobot: Virtual and Augmented Reality Assisted Robot Programming (Master's group project)**

03/2020 – 03/2021

- Contributed to the website development: <https://varobot-pg.github.io/>
- Conceptualized and deployed single-handedly a unique approach of programming a Lego NXT Mindstorm robot by programming an Android plugin for Unity using Java for LeJOS and Android Studio as the backend with high accuracy.
- Programmed an Android app for Robot Programming in AR with the team.
- Presented a seminar on the topic, "Introduction to Robot Operating System (ROS): Main Concepts and Application Scenarios".
- Tech. Stack: Java, Unity 3d, C#, Android, LeJOS, Python, HTML, CSS.

##### **Student Service: Full Stack Web Application**

12/2020 – 12/2020

- Programmed a full-stack web application to store and retrieve students' data in a MySQL database.
- Built a responsive UI and the RESTful API and set up communication between the components.
- Tech. Stack: Java, Spring Boot REST API, MySQL database, JPA, React, JavaScript, HTML, and CSS.

##### **Sentiment Analysis of Scraped Consumer Reviews (Bachelor's group project)**

04/2017 – 03/2018

- Contributed to the UI and REST API development.

- Scraped the data related to the searched item from 3 giant e-commerce websites.
- Programmed sentiment analysis script and arranged reviews into 3 categories.
- Documented the approach and results in a report.
- Tech. Stack: Python, Scrapy, BeautifulSoup, HTML, CSS, MongoDB, JSON.

## SPECIAL SKILLS

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Backend Development (Expert)

Full Stack Application Development (Advanced)

Database Management (Advanced)

Android Application Development (Advanced)

## SOFTWARE SKILLS

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Java (Expert)

Object-oriented Programming – OOPS (Expert)

Java Database Connectivity – JDBC (Expert)

Spring Boot (Advanced)

Java Persistence API – JPA (Advanced)

Hibernate (Advanced)

OSGi (Advanced)

REST API (Advanced)

Python (Advanced)

Git (Advanced)

MySQL (Advanced)

PostgreSQL (Postgres) (Advanced)

React.js (Intermediate)

JavaScript (Intermediate)

HTML (Intermediate)

CSS (Intermediate)

Docker (Intermediate)

Mockito (Intermediate)

GitLab – CI (Intermediate)

Flutter (Intermediate)

C# (Beginner)

C++ (Beginner)

## LANGUAGE SKILLS

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English: Fluent (C1)

German: Intermediate (B1)

Hindi: Native

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