RUCHIT BHARDWAJ

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EDUCATION

Master of Science in Computer Science, University of Southern California, Los Angeles, California   **Exp. May 2023**
Bachelor of Engineering in Computer Science, Nagpur University (RCOEM), India - **GPA - 9.89/10.0**   **May 2019**

TECHNICAL SKILLS

- *Programming Languages*: Java, Python, Javascript, C#
- *Frameworks*: Jersey RESTful Web Services Framework (JAX-RS Implementation), Django
- *Web Technologies*: HTML5, CSS3, JavaScript, jQuery, AJAX, Node.js, Express.js, Angular, Web Components
- *Databases*: PostgreSQL, Oracle, NoSQL, MongoDB
- *Others*: AWS, Maven, IDEA IntelliJ, VSCode, TeamCity, BitBucket, PgAdmin, Unity, Object-oriented Design, Algorithm Design, Data Structures, Problem Solving, Complexity Analysis.

PROFESSIONAL EXPERIENCE

Software Development Engineer - ZS Associates, Pune, India   **Jan 2019-Jul 2021**
Technologies: Java, Scala, Spark, PostgreSQL, Angular, Amazon Web Services, TeamCity, BitBucket

- Designed and developed software features for a proprietary ETL application using Java, Apache Spark, PostgreSQL, Angular and AWS. This product allowed the internal services team to increase the number of features delivered to clients by 40%.
- Identified and fixed 7 security vulnerabilities in application to boost system robustness and resilience.
- Managed DevOps of the product for QA, Pre-Prod and Production environments.
- Owned and maintained TeamCity builds to automate clean-up of logs and cache, improving the API performance by 30%.
- Revamped the Test Suites to automate repetitive tasks using a Behavioral Driven Development strategy i.e. Cucumber Framework covering 90% of product features. Initiated and completed functional testing of over 250 features of the application which included close interaction with AWS such as S3, EMR, EC2, CloudWatch, Lambda, and API Gateway.

Software Developer Intern - Indian Institute of Technology, Mumbai, India   **May 2018-Jul 2018**
Technologies: Django, cURL, Github, Selenium

- Architected and designed a framework to map Collaborative Community (CC) architecture to DSpace architecture.
- Built DSpaceX, a django app that standardized articles in Collaborative Community (CC) using python's xhtml2pdf library.
- Designed automation suites using Selenium to ensure code maintainability.

PROJECTS

Minimum Cost for Sequence Alignment - Java, Shell - (github.com/sequence-alignment)

- Implemented Needleman–Wunsch Dynamic Programming algorithm (in Java) for finding the minimum cost of sequence alignment. Also implemented Hirschberg's algorithm which used the Dynamic Programming and Divide and Conquer Paradigms, to optimize the space-complexity of the Needleman–Wunsch algorithm from quadratic to linear.
- Performed time & space-complexity analysis of both approaches (Plain DP vs. DP + Divide & Conquer) graphically on strings with increasing lengths.

Tribal Tourism - Java, XML, Firebase, Android Studio - (github.com/tribal-tourism)

- Designed and engineered an android app to promote tourism in tribal areas by tribal people. The idea was to allow any tribe to use the app to promote native localities, business ventures, local homestays, tribal tours, and cultural performances in tribal areas/villages. The project was a part of Smart India Hackathon, 2018 Finals and ranked in the top 10 implementations.

AI Smart Mirror Prototype - Wit.ai, Python, OpenCV, ffmpeg, NLG - (github.com/ai-smart-mirror)

- Implemented an AI module to work as a personal smart assistant. Used NLP to establish interaction between humans and AI Bot. Leveraged the service wit.ai to train the bot.

Others - Pocket Invest - (github.com/pocket-invest), Medical Analyzer in VR - (github.com/medical-analyzer)

PUBLICATIONS

- [Mirr-Active: An Artificially Intelligent and Interactive Mirror](#) - International Conference on Advanced Computation and Telecommunication (ICACAT)
- [Amortized Complexity Analysis for Red-Black trees and Splay Trees](#) - International Journal of Innovative Research in Computer Science and Technology (IJIRCST)
- [Security in Distributed Systems](#)   - Journal of Analysis and Computations (JAC)