Arpit Shekhar Raj

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EDUCATION

Syracuse University - College of Engineering & Computer Science, Syracuse, NY — August 2021 - May 2023

Master of Science in Computer Science

Relevant Courses: Design & Analysis of Algorithms, Object Oriented Design, Operating Systems, Computer Architecture, Artificial Intelligence, Evolutionary Machine Learning, Blockchain

KIIT University - School of Computer Engineering, Bhubaneswar, India — July 2014 - May 2018

Bachelor of Technology in Information Technology

Relevant Courses: Operating Systems, Database Management System, Computer Network, Data Analytics

TECHNICAL SKILLS

- Programing Languages: Java, Python, JavaScript, R, C, C++, HTML, Powershell
- Frameworks: React, Spring Boot, Node.js, TensorFlow, Keras, PyTorch
- Tools and Technologies: Git, Maven, Azure, Selenium, Docker, Kubernetes, JUnit, AWS EC2, Amazon S3
- Database: Oracle, MySQL, MongoDB, PostgreSQL
- Certification: AWS Cloud Practitioner

EXPERIENCE

Graduate Teaching Assistant, Syracuse University – Syracuse, NY — January 2022 - May 2023

- Teaching Assistant for Software Implementation (CIS 454) and Software Specification and Design (CIS 453)

Software Engineer Intern, Constant Contact – Waltham, MA — July 2022 - December 2022

- Designed dynamic user interface in React to enable updating of the web app based on user privileges
- Developed a shell script to automate the management and upgrading of React dependencies within the codebase
- Enhanced data validation in Java backend to improve applications reliability
- Refactored the codebase to enforce standardization and facilitate integrated deployment of new features
- Improved the CI/CD pipeline through the correction and modification of the automated Protractor testing framework

Software Engineer, Deloitte – Hyderabad, India — January 2018 - August 2021

- Developed, enhanced, and maintained multiple customer facing Software as a Service applications
- Built CI/CD pipelines using Azure DevOps and Git for version control, improving software delivery process
- Designed a Selenium-based automated testing of report generation feature of LeaseController product
- Constructed backend data retrieval system and report generation for debt structuring application TDR
- Onboarded new clients and supported existing ones with access and network security for LeaseController product
- Functioned in Agile teams, utilizing Scrum methodology and serving as a Scrum Master at times

Data Analyst Intern, 6th Sense OPC Pvt. Ltd – Bhubaneswar, India — June 2017 - July 2017

- Created a multivariate regression model to predict losses incurred by an insurance company
- Developed a web scrapping tool in R to streamline data refinement process for clients

ACADEMIC PROJECTS

Health Vitals Monitoring Web App [Node, React, SpringBoot, PostgreSQL] — January 2023

- Built a web app using SpringBoot for backend and React for front End, for tracking and analyzing vitals
- Implemented CRUD functionality on PostgreSQL database to update and store vitals
- Designed and implemented RESTful API endpoints and leveraged Axios to handle calls from the frontend
- Deployed backend on AWS EC2 and frontend on S3 leveraging Infrastructure as Code (IaC) practices
- Used Docker and Kubernetes for containerization and orchestration of the application

Image Classification using CNN and Evolutionary ML Algorithm [Scikit-learn, Keras, Numpy] — May 2023

- Investigated application of Ant Colony Optimization (ACO), Genetic Algorithm (GA), and Particle Swarm Optimization (PSO) to boost the performance of convolutional neural network for image classification
- Performed data preprocessing steps including feature extractions, date refinement, NAN handling, and scaling
- Achieved superior performance in CNN by applying Evolutionary Algorithms for hyperparameter optimization.
- Improved test accuracy (81.53%) and ROC-AUC scores (0.9815) over default or random hyperparameters(56.72%)

Chess AI Engine [Python, Pygame, Numpy] — December 2022

- Designed two chess engines using Tree Based AI and Random AI approaches, improving the overall performance and accuracy of the engines
- Incorporated various game modes, such as multiplayer, AI vs player, increasing user options and usage
- Created a chess GUI using Pygame with features such as move highlights, undo, and logs for improved user experience