

Abhijeet Mohanty

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[Personal Website](#)

Break down problems into simpler ones.

EDUCATION

University of Illinois at Chicago

Aug '17 – May '19

Master of Science in Computer Science with thesis

GPA: 3.8/4.0

Coursework: Computer Algorithms, Cloud Computing, Object Oriented Languages, Software Development for Mobile Platforms, Advanced Software Engineering

National Institute of Technology, Karnataka

Jun '13 – May '17

Bachelor of Technology in Computer Engineering

SKILLS

Languages: Java, Scala, Python, TypeScript, JavaScript

Web Technologies: Spring, Angular, React, Redux

Databases: MySQL, PostgreSQL, MongoDB

Frameworks: Apache Spark, Hadoop, Junit, Mockito

Tools and Cloud: AWS (EC2, S3, EMR), Docker, Kubernetes, Maven, Gradle, sbt, Git

WORK EXPERIENCE

University of Illinois at Chicago | Graduate Student Researcher – Empirical Software Engineering

May '19 – Present

Advisor: Dr. Mark Grechanik

- Developing a pipeline for generation of ontologies and research units from a corpus of research papers such as research questions.
- Built a tool (**Angular + Flask + Python + MongoDB**) to store meanings, categories and relations of characteristic terms of the corpus.
- Developed an entropy loss-based algorithm (**Pandas + NumPy + scikit-learn**) for the categorization of characteristic terms from the corpus.

Societe Generale Global Solutions Centre | Specialist Software Engineer – Investment Banking Technology

Aug '17 – Jul '19

Java | Spring Framework | RESTful Web Services | Angular

- Developed REST APIs (**Spring**) and an interactive user interface (**Angular**) for Orchestrator to record workflow configuration information.
- Wrote the data acquisition layer with **OAuth** integration eliminating load of files thereby reducing SLA by 4 hours/day and code debt by 5%.
- Implemented the purge module (**Spring Data JPA**) to remove resources (DB entries/ files) saving support team manhours by 2 hours/month.
- Developed a widget using **React** and **Redux** to automate daily morning checks requiring manual DB querying.
- Led a team of 4 software engineers and 2 business analysts for the integration of **Spring WebFlux** into web services.

PROJECTS

Publication data analyzer

Scala | Apache Hadoop | sbt | AWS EMR

- Leveraged **Apache Hadoop** and **Scala** to analyze 2 million publication records using the map-reduce framework.
- Calculated authorship score, co-author count and bucketing along with performing a sort using the shuffle and sort technique.
- Implemented a customized multi-tag record generator to accommodate for multiple publication types.

Stock trader

Scala | Apache Spark | Alpha Vantage API | sbt | AWS EMR

- Utilized **Apache Spark** and **Scala** to iteratively select a portion of stock to predict possible losses/ profits from a portfolio.
- Made use of **Monte-Carlo** for random sampling of stocks and compared it with a greedy based sampling approach.

Design Pattern Verifier

Java | Annotation Processing | Google Guava

- Created a **customized annotation processor** to verify the correct/ incorrect implementations of the **memento design pattern**.
- Designed a **generic solution** which can handle an extended set of design patterns through a **rule set based architecture**.

Lightweight GraphQL client

Scala | GraphQL | Design patterns

- Created a **string based GraphQL client** to fetch repository metadata from GitHub accounts.
- Implemented **abstract factory pattern**, **observer pattern** and the **façade pattern** to implement response parsers and query loggers.
- Recorded memory usage, process load and threading information using a **profiler**.

Akka based cloud simulator

Scala | Akka | Akka-HTTP | Docker

- Developed a distributed and fault tolerant network of nodes using the **Akka framework**.
- Implemented the **Chord algorithm** for optimized lookup and rearrangement of data across computing nodes through **web services**.
- Containerized and deployed the application using **Docker** and **DockerHub**, respectively.

Functional command executor

Scala | Functional Programming | Linux commands

- Developed a composable Linux command execution framework using functional programming constructs
- Leveraged concepts such as sealed traits, monads, implicit type checking and type aliases to enable options and piping for commands.

ACHIEVEMENTS

Employee of the Month, Societe Generale: Rewarded for assisting in the deployment of Orchestrator

Jan '19