

# Karan Tyagi

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## EDUCATION

**Northeastern University, Boston, MA**

Sept. 2017 - Dec. 2019

Master of Science in Computer Science, **GPA: 3.81**

**Relevant Coursework:** Algorithms, Managing Software Development, Parallel Data Processing using Map Reduce

**Institute of Engineering and Technology, Lucknow, India**

July 2010 - June 2014

Bachelor of Technology in Computer Science and Engineering, **GPA: 3.68**

## TECHNICAL SKILLS

<b>Programming Languages</b>	Java, C#, SQL, Python, HTML, CSS, Javascript
<b>Web Technologies</b>	jQuery, React, Redux, Angular, Express, Node, Spring Boot, .NET Framework
<b>Tools</b>	Git, Bitbucket, Jira, IntelliJ, Eclipse, Visual Studio, Bamboo, Swagger, Postman, Heroku
<b>Others</b>	Linux, Hadoop MapReduce, Spark, Amazon Web Services (AWS) - EMR, S3, RabbitMQ
<b>Databases</b>	MS SQL Server, MySQL, MongoDB (NoSQL)

## EXPERIENCE

**Application Developer Co-op** | Annaly Capital Management Inc., New York

Jan. - Aug. 2019

- Designed and implemented the **Health Check Monitoring System** to monitor critical jobs and SLA data breaches  
Created persistence layer, coded middle tier processes, and web APIs using **C#** and **.NET framework**  
Improved the efficiency of intercepting overnight support issues and job failures by more than 50%
- Implemented **Message Queuing library** with publish-subscribe and broadcasting functionality using **RabbitMQ** and helped integration of message queuing with the existing financial systems
- Automated the deployment of Database Change Requests by creating a service to query **Jira API** for change requests, improving deployment time for such requests by more than 80%
- Built an **Authentication web service** using **JWT** to be used by other services running in docker containers
- Updated the workflow automation **WPF** application for running portfolio predictions by adding features for tweaking rules, extended the **REST API** backend using **Entity framework**, **.NET core** and **ASP.NET Web API**

**Graduate Teaching Assistant** | Northeastern University, Boston

Jan. - Apr. 2018, Sept. - Dec. 2018

- Tutored more than 50 students for Computer Graphics, helped them with Graphics programming in **C++** and **OpenGL**
- Conducted labs, office hours and graded assessments, and assisted students with debugging in Linux environment

## PROJECTS

**Job Search Portal** | Northeastern University

May - July 2018

- Developed a RESTful web app for allowing users to browse, save and apply to job postings, which were aggregated from Github Jobs API along with jobs posted by registered recruiters | **AngularJS**, **MongoDB**, **ExpressJS**, **NodeJS**

**WhiteBoard - Course Management System** | Northeastern University

Apr. - May 2018

- Developed Admin and Faculty modules using **jQuery**, **ReactJS**, **Redux**, which interacted with a **MySQL** database server using a **java** middle tier (**Spring Boot**, **JPA**), all of which was deployed on **Heroku**
- Student modules were built using **MEAN** stack (**Angular**, **Node**, **MongoDB**, **NodeJS**) and deployed on **Heroku**

**Accessible Screen Navigation and Conversational assistant for the Visually Impaired** | Perkins Hackathon

Feb. 2018

- Spearheaded the development of a navigation system and architected various modules to build a POC in 18 hours
- Programmed finger detection service and beep generation module using **Python**, **OpenCV**, **Google Cloud Vision API**

**Search Engine** | Northeastern University

Jan. - Apr. 2018

- Implemented a Web crawler, Indexer, Query processor and developed a Search Engine in **Java** with features like query expansion, pseudo-relevance feedback and snippet generation | **Java**, **Apache Lucene** and **Maven**
- Evaluated the performance of different retrieval models like TF-IDF, BM25, and Query Likelihood model and Lucene

## HACKATHONS

- OvenBot - Display Screen Navigation for the Blind | Won "**Best Accessibility Design**" prize PerkinsHack 2018
- American Sign Language Interpreter | Won "**Best use of Amazon Web Services (AWS)**" prize HackWIT 2017