# 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, Database, Software Engineering, Web Development, Hadoop MapReduce

**Institute of Engineering and Technology, Lucknow, India**                                      *July 2010 - June 2014*
*Bachelor of Technology in Computer Science and Engineering*, **GPA: 3.68**

## TECHNICAL SKILLS

| | |
|---|---|
| **Programming Languages** | C#, Java, Python |
| **Web Technologies** | HTML, CSS, Javascript, Angular, Express, Node, Spring Boot, .NET Framework, ASP.NET MVC |
| **Tools** | Git, Bitbucket, Jira, IntelliJ, Eclipse, Visual Studio, Bamboo, Swagger, Postman, NUnit |
| **Others** | Hadoop MapReduce, Amazon Web Services (Elastic Beanstalk, S3, EMR), RabbitMQ |
| **Databases** | MS SQL Server, MySQL, MongoDB (NoSQL), AWS - RDS |

## 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 breaches
  Created persistence layer, coded middle tier processes, and web APIs in **C#, ASP.NET Web API** and **.NET Core**
  Improved the efficiency of intercepting overnight support issues and job failures by more than 50%
- Implemented a **Message Queuing Library** in C# with publish-subscribe and broadcasting functionality using **RabbitMQ** and helped integrating the message queuing library with the existing financial systems
- Automated the deployment of Database Change Requests by creating a service to query Jira API for change requests and using SQL Server Management Objects for executing database changes. Improved deployment time by 80%
- Extended the internal CRM web application by adding features like managing meetings using **ASP.NET MVC** and **Entity framework**
- Built an **Authentication** web service **using JWT** tokens to be used by other services running in docker containers

**Graduate Teaching Assistant** | *Northeastern University, Boston*                    *Jan. - Apr. 2018, Sept. - Dec. 2018*
- Tutored labs and conducted course related doubt sessions for Computer Graphics course using OpenGL

## PROJECTS

**Twitter Social Amplification Analysis** | *Northeastern University*                               *Oct. - Nov. 2019*
- Analyzed follower count using Twitter Follower data set consisting of 10 million records with MapReduce and Spark
- Performed social amplification by finding triangle relationships | **Hadoop MapReduce, Java, AWS - S3, EMR**

**Job Portal** | *Northeastern University*                                                                          *May - June 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 other jobs posted by recruiters | **MongoDB**, **ExpressJS**, **Angular, NodeJS, Mongoose**

**WhiteBoard - A Course Management System** | *Northeastern University*                          *Mar. - May 2018*
- A web app for creating and managing courses and registering students | **Angular, Spring Boot, JPA, Java, MySQL**

**OvenBot - Digital Display Navigational Assistant for the Visually Impaired** | *Perkins Hackathon*      *Feb. 2018*
- Spearheaded the development of a navigation system and architected various modules to present a POC in 18 hours
- Programmed finger detection service and beep generation module using **Python**, **OpenCV**, **Google Cloud Platform**

**Search Engine** | *Northeastern University*                                                                  *Jan. - Apr. 2018*
- Implemented Web crawler, Indexer, Query processor features and Snippet Generator | **Java**, **Apache Lucene Maven**
- Evaluated the performance of different document retrieval models like TF-IDF, BM25, and Lucene

## HACKATHONS AND AWARDS

- *OvenBot - Display Screen Navigation for the Blind* | Won "**Best Accessibility Design**" prize            *PerkinsHack 2018*
- *Emosic - Emotion Recognizing Music Player* | Python, OpenCV, Microsoft Azure Cloud            *HackBeanPot 2018*
- *American Sign Language Interpreter* | Won "**Best use of Amazon Web Services (AWS)**" prize            *HackWIT 2017*