

# REVATHI VIJAYARAGHAVAN

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## Education

### University of Pennsylvania

*MSE in Computer and Information Science*

**Aug 2021 – May 2023**

*Philadelphia, PA, USA*

**Relevant Coursework:** Software Systems, Internet and Distributed Systems, ML, DL, AI, Programming and Problem Solving

### Veermata Jijabai Technological Institute

*B.Tech in Computer Engineering*

**Aug 2017 – May 2021**

*Mumbai, India*

## Experience

### Amazon (AWS)

*Software Development Engineer Intern*

**June 2022 – Aug 2022**

*Boston, MA, USA*

- Worked under the AWS department for automating the connection of a new EBS root volume to a running EC2 instance as part of the S3 implementation to reduce manual inputs and associated errors in the process.
- Implemented an efficient solution for the automation using Scala, Python and Bash scripting which reduced manual errors in the process of an EBS boot replacement by adding a workflow for the same in an existing distributed system. Extensively tested the solution using unit tests (Mockito).

### VJTI AI and Blockchain Lab

*Student Developer*

**August 2020 – July 2021**

*Mumbai, India*

- Worked on multiple projects under the Director of VJTI, Dr. Dhiren Patel. Technologies used include Python, NoSQL, AlexaSkills, AWS Lambda.
- Made a static on-campus navigation system for VJTI campus through Alexa, as there was no help provided in navigating the campus previously. Personal contributions include developing the back-end logic using Alexa Skills and Python that involved conversion of *physical maps* to *digital maps* - which involved finding the best way to represent digital maps, implementing the *shortest-path planning algorithm*, and *translation* of local language (Hindi) to English for input to Alexa devices which were the user-input endpoints of the system. ([Link](#))

### Morgan Stanley

*Summer Technology Analyst*

**May 2020 – July 2020**

*Mumbai, India*

- Worked on Automation of RTS27 reporting. Technologies used include Python, GreenplumDB.
- Significantly reduced time spent on generating RTS27 reports which was introduced a reduction from four months to approximately a few minutes. Automated the existing the manual workflow using python scripting to replace shell scripting, Greenplum DB for building an ETL pipeline and AutoSys for jobs automation. Worked extensively with Databases and data-manipulation in a big-data setting.

## Technical Skills

**Languages:** SQL (MySQL, PostgreSQL, NoSQL), C/C++, Python, Bash Script, Java, JavaScript

**Frameworks/Tools:** AWS, AWS Native, REST-APIs, Linux, JIRA, git, Node.js, React, Flask, Django, ML frameworks in Python (scikit, tensorflow, keras, PyTorch), SDLC, UML, Object-oriented programming and design, Unit Testing

## Projects

### Youtube MuSync — Node.js, Sockets, Express

**Nov 2022**

- Individual Project: A web-app built in to sync watching youtube videos or listening to music on youtube.
- **Key Contributions:** Developed the said project to facilitate synchronized listening to music and watching videos on Youtube, using Node + Express framework and socket communication between the clients and the server. Any request like play/pause/stop made by any client is forwarded to every other connected client and the action is replicated on every client to make synchronized viewing easier. Watch a demo on my [github](#).

### PennCloud — C++, Distributed Systems, Fault Tolerant and resilient systems

**Nov - Dec 2022**

- Team of 4: Goal of the project is to build a complete cloud service that supports emails (local and non-local) and a storage service that supports upload and download for any file type. The storage service is similar to Google's BigTable. ([Link to Report](#))
- **Key Contributions:** Worked on the load-balancer that allocates clients to the front-end as well as allocates (depending on the current request) backend nodes to the front-end. Additionally wrote the backend request processing, sharding of data, and built the admin functionality that can control nodes' statuses to test the service rigorously.

### Visual Question Answering — Python, PyTorch ML/AI, Computer Vision, NLP

**Apr - May 2022**

- **Key Contributions:** Developed and compared various non-deep learning and deep learning methods, including attention-based approaches, to accurately answer natural language questions based on both the image and the question posed in the challenging task of Visual Question Answering. ([Link](#))