

Karthik Murugesan

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EDUCATION

M.S. Computer Science

Arizona State University, Tempe, AZ

Graduating May 2023

B.Tech Information technology

Anna University, Chennai, India

May 2018

CGPA: 7.62/10

PROFESSIONAL EXPERIENCE

Freshworks - Software Engineer

June 2018 to August 2021

- Designed and developed scalable services and features for the product 'Freshdesk' using **Ruby on Rails** and **Java Spring Boot**.
- Worked extensively on improving the performance of the product. Rewrote existing code and **SQL** queries to execute more efficiently, reducing the resources consumed. Improved the execution time of several APIs by 70-80%.
- Collaborated with people from different teams and products to develop cross-product integrations for Freshdesk.
- Developed the feature "Custom Translations" to help users from different language backgrounds use Freshdesk. This feature lets customers manage the translation of 1000s of fields in bulk as needed.
- Developed the feature "Custom objects" using Java Spring Boot, which allows customers to simulate their business entities and their relationships within Freshdesk.

Indian Institute of Information Technology - Research Intern - Chennai, India

June 2017 to Nov 2017

- Worked on the problem of an efficient approach to compression employing **data mining** techniques.
- Created a **compression** algorithm based on Frequent Sequence Mining using Python.
- Based on this algorithm and the data collected from simulations, published the paper ' [Frequent Sequence Mining Approach to Video Compression](#) ' as a Springer book chapter.

RELEVANT PROJECTS

Facial Emotion recognition using transfer learning - Personal project

June 2021

- Applied transfer learning to the ImageNet dataset pre-trained Inception V3 model, to predict facial emotions. Implemented using **Pytorch**.
- Created proper documentation for training, testing, and inference using command line arguments.

English to Spanish Translation - Personal Project

Feb 2021

- Utilizing the Seq2Seq model with attention and **Tensorflow**, created a system to translate text from English to Spanish.
- Developed a Flask app to provide a user-friendly way to interact with this application.

Semantic search - Personal Project

Jan 2021

- Implemented semantic search on a million news article headlines.
- Used approximate nearest neighbor search on the sentence embeddings to find the closest matching headline to the search term.
- Could be applied to production-level applications with huge data for smarter meaning-based search with low latency.

Transformer summarizer - Personal Project

July 2021

- Used the transformer architecture to condense the contents of a long document into a shorter one while preserving most of its meaning.

TECHNICAL SKILLS

Programming Languages: Java, Python, Ruby, JavaScript, C/C++

Frameworks: Ruby on Rails, Java Spring Boot, Node.js, Flask

Tools, Databases, and OS: SQL, NoSQL, MongoDB, Git, Pytorch, Tensorflow, Linux/Unix

EXTRACURRICULAR EXPERIENCE

ASU Machine Learning Club - Advisor

- Actively addressed the questions and doubts raised by the members about machine learning. Provided suggestions for the topics to be covered in weekly meetings.

ASU Software Developers Association - Member

- Attended weekly meetings to gain experience in Software Engineering and Computer Science related topics