# Karan Ashokkumar Pardasani

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# EDUCATION

**Rutgers University,** *New Brunswick, New Jersey* ***Sept 2021-May 2023***

*Master of Science in Computer Science -* ***GPA: 4.0/4.0***

**Relevant Courses:** Data Structure and Algorithms, Machine Learning, Massive Data Mining, AI for Visual Computing

**DA-IICT,** *Gandhinagar, India* ***Aug 2016-Aug 2020***

*Bachelor of Technology in Information and Communication Technology –* **GPA: 9.07/10.0**

**Relevant Courses:** Data Structure and Algorithms, Database Management and System, Operating System, and Computer Networks

# WORK EXPERIENCE

# Software Engineer Intern, Varian Medical Systems, a Siemens Healthineers Company *May 2022 – Aug 2022*

* Automated test scenarios using Python Framework which **automates 40 hours** of the manual task required to complete the test.
* Developed data parsers (XML, CSV) to efficiently parse and store data in a data structure.
* Improved functionality in Test Automation Framework to **reduce the time required to complete the workflow by 43%**.

# IT Research Support Specialist, Data Science, *Rutgers University Jan 2022 – Present*

* Built **database and developed APIs to store data and generate reports** for the research conducted by professors in the department which **automated 90% of the manual work done** by the staff.
* Designing and implementing workflows using **KNIME, Python, Java and JavaScript, HTML/CSS** for NLP algorithms, helping more than **20 faculties and 1700 students** with a non-coding background to efficiently utilize the tools for their research.

**Software Engineer,** *Monocept – Hyderabad, India* ***Nov 2020-May 2021***

* + Built dynamic components in **React.js and Redux** to display unique information based on the user location.
  + Built the online text editor in a book writing platform, **using Draft.js,** from which 60 books were published
  + Collaborated with a team of 5 members to prepare database schema and tables and made **REST APIs in Python Django** to extract data from **PostgreSQL, MongoDB, and AWS S3**.
  + Optimized existing **REST services** and database design leading to **a 30% decrease in API latency** and a **25% increase in books released per week.**

**PUBLICATIONS**

* Kotta H., **Pardasani K.**, Pandya M., Ghosh R. (2021) [Optimization of Loss Functions for Predictive Soil Mapping.](https://link.springer.com/chapter/10.1007/978-981-15-3383-9_9)

**PROJECTS**

**Movie Recommender System| Skills Used: Machine Learning, Python, TensorFlow, GitHub**

* Built a movie recommender system to incorporate personalization for users in terms of genre, director, and rating. Implemented popularity-based, content-based, collaborative filtering, and latent factor (SVD) models using the Movie Lens dataset. Studied the models and combined the features to form a hybrid model which showed an improvement in the accuracy of predicted ratings, introduced a diversity factor and tackled the cold start problem.

**Pizza Generator | Skills Used: Deep Learning, GANs, PyTorch, Python, Pandas, Numpy**

* Explored Paired and Unpaired Image to Image Translation using Deep Convolutional Network by training PatchGAN and CycleGAN models to generate pizza images that are similar to input images and follow characteristics from the target dataset. Also, **developed a novel approach to improve the performance of the Cycle GAN** model which led to a **23% decrease in FID score** and a **33% increase in Inception score**.

**Voyage Into the Unknown | Skills Used: Robot Path Planning, Python, Pandas, Numpy, Optimization, GitHub |** [**GitHub**](https://github.com/Karan-Pardasani/Voyage-Into-the-unknown)

* Designed and implemented variations of the A\* algorithm, using **Python with multiprocessing**, for different scenarios of target finding agent in the given grid world with obstacles, where the agent has no prior knowledge of the environment and learns about it as it traverses along the grid world. Utilized the data generated from the implemented algorithmic agents to train a model using **TensorFlow and Keras** to mimic the behavior of algorithmic agents gaining over **91% accuracy**.

**Dynamic Matchmaking Machine | Skills Used: Artificial Neural Network, Python, PyTorch |** [**GitHub**](https://github.com/Karan-Pardasani/Dynamic-Matchmaking-Machine)

* Improved upon the Short-Term and Long-Term Memory models described in the [research paper](https://www.sciencedirect.com/science/article/pii/S0893608019301030?via%3Dihub), using **PyTorch**, gaining **96.3% accuracy** using the MNIST dataset. After training the model on new data, **the accuracy of the old test data was reduced to 89%**. This **shows retention of memory after training the model on new data**.

**SKILLS**

**Programming Languages** Python, Java,React.js, C, C++, SQL, JavaScript, HTML5, CSS, Bootstrap, RESTful Webservices

**Frameworks** Python Django, Django Rest Framework

# Databases MySQL, PostgreSQL

# Other GitHub, Object-Oriented Programming, Postman, Visual Studio, Amazon S3