

# ADITYA MADHUSUDHAN

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Computer Science Engineer by training pursuing masters in computer science to procure skills in disciplines of data mining and data manipulation with adequate experience in agile application development environment, currently exploring internships opportunities.

## Education

<b>Florida State University</b> Masters Computer Science	Tallahassee, FL, USA <i>August 2022 – April 2024</i>
<b>ACS College of Engineering</b> Masters Computer Science	Bangalore, KA, India <i>July 2017 – July 2021</i>

## Experience

<b>Grassroots-GRSSL, Software Developer</b>	August 2021–April 2022
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- Developed customer-relationship model software's for call centre outsourcing teams using React and NextJS **JavaScript TechStacks**.
- Developed **services to calculate customer retention rate and customer satisfaction index** for a multi-chain restaurant.
- Designed **aesthetic and response UI's** using ReactJS and NextJS and provided database snapshot of **existing and real-time data**.
- Optimized **data analysis algorithms to compute existing and real-time data** to provide a database snapshot to the users
- Programmed **action classes in node environment** to provide user exclusive functions and modules to help users interact with data available in the database using exclusive **OAuth 2.0**.
- Worked and developed **auto-dialler CRM** concept that increased the productivity by more than 50%.

<b>NH Robotics, Freelance Software Developer</b>	September 2021 – July 2022
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- Worked on **ROS and ROS bridge package to facilitate communication** between a robot and user interface.
- Worked on camera imaging processing and LiDar sensors to predict object distance and create a map of the environment.
- Designed and developed UI modules in **React** and multiple **API services that published and subscribed data** to control the robot from providing through the user interface.
- Programmed a **user role authentication** layer on the controller side to protect sensitive data.

<b>Oxyease, Software Development Intern</b>	February 2021 – June 2021
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- Designed and developed a **full-stack MERN application** that served as a platform for buying, selling, and renting oxygen machines.
- Implemented various modules to provide status of inventory in real time and customer independent product subscription, suggestions and offers.
- Interacted directly with end users** to enhance user interaction and navigation on the platform.

<b>Marek Adventures, Software Development Intern</b>	October 2020 – December 2020
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- Designed aesthetic and responsive **website using WordPress** for an African touring firm.
- Implemented MySQL stored procedures modules on touring information, calculate pricing and group booking.

<b>Esilicon TechnoDesign Private Limited, Software Development Intern</b>	July 2020 – September 2020
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- Developed multiple **data subscription API's that used to pre-process data** before storing in the database.
- Used **NodeJS and Express** to develop API services with cookie based authentication for each API end route.
- Learnt various techniques to solve challenges also how to identify limitations in a solution.

## Software Projects

### Edge-Disjoint Partitioning

- An algorithm that finds the shortest path in directed weighted graph or sub-graphs without pre-processing the graph data. The algorithm has indexing and traversing methods to find and store values.

### Image compression using Auto-Encoders

- Trained four **artificial neural network models** on MINST, Fashion-MNIST, CIFAR-10 and STL image datasets.
- Used **Torch neural network modules** to construction the model and **BCE Loss** to measure reconstruction error.

### Logistic Regression and ResNet

- Programmed the gradient descent, loss function and backward loss calculation for the logistic regression neural network model. Constructed ResNet architecture using the torch neural network modules.

## Research Projects

<b>Combined Visual Cryptography and Steganography</b>	<i>December 2020 – June 2021</i>
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A cryptographic algorithm that embeds plain text into an image using steganographic and further uses visual cryptography technique to shuffle the pixels in the image.

<b>Medicinal Plants Classification</b>	<i>March 2021 – July 2020</i>
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A machine learning model trained to recognized medicinal plants leaves also provides a short description of the prediction.

## Technical Skills

**Programming:** HTML, CSS, JavaScript, PHP, Java, Python, C, Kotlin, JSON.

**Application Framework:** ReactJS, React-Native, Java for Android development, AngularJS, NextJS, NodeJS, SwiftUI, Express, Fastify, StrapiJS, JSF.

**Databases:** MySQL, MongoDB, DynamoDB, S3 Bucket.

**Cloud Services:** MongoDB, S3 Bucket, DynamoDB, Heroku, AWS Elastic Beanstalk.