

# Sri Hari Sivashanmugam

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## EXPERIENCE

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### Junior Machine Learning Engineer, OMDENA

Aug 2021 - Nov 2021

- Collaborated with 58 data scientists across countries to expand cardiac arrest prediction to pulseless electrical activity.
- Cataloged exploratory data analysis: visualization and documentation for the project in form of videos, infographics, and 2 project reports.

### Data Scientist Intern, Caterpillar Inc.

Jan 2021 - Jul 2021

- Executed Marketing to Sales Attribution; improved sales per marketing campaign leveraging statistical methods by 8%.
- Analyzed ready-to-buy model, improved second purchase for 50000 single purchase customers using innovative solutions.
- Evaluated important features reducing it from 90+ features to 40+ features for the existing customer purchase model.
- Designed an optimized web page for the Customer Experience division, operated daily by over 45000+ people.

## PROJECTS

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### Modularized Workplace Safety Monitoring System

- As finalist of Grainger Competition 2021, Developed a workplace safety monitoring system (Pose Estimation, Face Mask detector module, new modules can be added as needed) with plug and play scaling capability
- Introduced a highly accurate and real-time technique that can efficiently detect people not wearing masks
- Used MobileNet architecture to increase the accuracy to 99 percent of the face mask detector
- Google's BlazePose architecture detected the 33 key points from the body using the Mediapipe library
- Modularized the system using Object-Oriented Design, and presented it as a subscription-based cloud service strategy

### Designed and Developed a Database Management System

- Developed a 4 tier Database Management System - storage manager, buffer manager, Index, and record manager
- Implemented design concepts like buffer manager and indexes to optimize the query execution
- Fixed memory leaks, improved storage efficiency, designed the indexed manager using B+ tree to increase search speed

### Image Caption Generator Using Auto Encoder

- Created a merge architecture in order to keep the image out of the RNN/LSTM and thus be able to train the part of the neural network that handles images and the part that handles language separately
- 32000 data points (image and text) were used to train and validate the model resulting in a precision of 93%
- Implemented transfer learning methods to build the convolutional model; Used pre-built Glove model as embedding layer in the recurrent model

### Pneumonia Detection Using Deep Convolutional Neural Network

- Built a Convolutional Neural Network model to classify a chest X-Ray to be affected by pneumonia or not.
- Implemented transfer learning using the VGG-16 model to obtain better accuracy than traditional models.

## EDUCATION

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### Masters , Data Science

Aug 2021 - May 2023

Illinois Institute of Technology

GPA: 3.7/4.0

### Bachelor of Technology, Computer Science and Engineering

May 2017 - May 2021

Amrita Vishwa Vidhyapeetham

GPA: 8.9/10.0

## SKILLS

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**Languages:** Python, R, SQL, Java, C, HTML, CSS, JavaScript

**Tools and Technologies:** Feature Engineering, Hypothesis Testing, Data Visualization, Model Evaluation, Machine learning - Regression & Classification Algorithms, Deep learning, Hyperparameter Tuning, Attribution Modelling, Survival Analysis, Jupyter, Colab, Pycharm, Rstudio, Eclipse, VS Code, AWS S3, AWS EMR, Hadoop

**Visualization :** Matplotlib, Seaborn, Power BI, Excel Charts

## EXTRACURRICULAR

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- **Integrity Preserved Multifactor Authentication Based Automated Ticketing System (Publication)**
- **Enhancing Security Of One Time Passwords In Online Banking Systems (Publication)**
- Media and 4sight/Metric Lead for Intinium (**Student Organization**)
- Volunteered for Robinhood Army - Food Distribution Campaign
- Completed a course on **Applied Plotting, Charting & Data Representation in Python** (University of Michigan)
- Secured within the **top 10** positions in a 12-hour **AISmart Hackathon** conducted by **Intel**

## COURSEWORK

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- Machine Learning, Neural Network and Deep Learning, Big Data, Advanced Database Organization, Applied Statistics, Database Management, Object-Oriented Programming, Data Structures, and Algorithms