

# Sundar Viswanathan

DATA SCIENCE · ARTIFICIAL INTELLIGENCE

☎ (+65) 91405714 | ✉ msundarv@gmail.com | 🏠 msundarv.com | 📷 msundarv | 📺 msundarv | 📱 msundarv



## EDUCATION

### National University of Singapore

MASTER'S IN ARTIFICIAL INTELLIGENCE

Singapore

Aug. 2018 - Jan. 2020

### Amrita Vishwa Vidyapeetham

BACHELOR'S IN COMPUTER SCIENCE

Coimbatore, India

Aug. 2011 - July 2015

## SKILLS

**Languages** English, Tamil.

**Programming** *Proficient:* Python; *Familiar:* JAVA, C++, C, J2EE, PHP, C#, JavaScript, AngularJS, NodeJS.

Pandas, scikit-learn, Keras, TensorFlow, PyTorch, Hugging Face Transformers, LangChain, NumPy, SciPy, FastAPI, Matplotlib,

**Libraries** Streamlit, AllenNLP, spaCy, NLTK, fairseq, OpenCV, PIL, PCL, statsmodels, lifelines, PyOD, librosa, pyAudioAnalysis, reliability, Skforecast, Seaborn, Vuforia.

**Tools** Tableau, Grafana, DbVisualizer, Protégé, Postman, Android SDK, Unity3D, Android NDK, MATLAB.

**DevOps** GitLab, Jenkins, Jira, Docker.

**Databases** InfluxDB, Blazegraph, Neo4j, GraphDB, ChromaDB, Hive, MySQL, SQLite.

**Cloud** AWS (SageMaker, EC2, Lambda, API Gateway), Microsoft Azure, GCP.

## WORK EXPERIENCE

### Siemens Digital Industries

SENIOR DATA SCIENTIST

Singapore

July 2022 - Present

- Part of IoT services team, focusing on industrial data science use cases.
- Building RAG-based digital assistant for Industrial Service Exchange (ISE) to resolve L1 tickets. Using LangChain and HuggingFace framework in AWS environment for the same.
- Working on data-driven approaches for improving the efficiency of chiller plants.
- Developing computer vision modules for visual inspection under different industrial conditions.
- Implemented a content-based recommender system for a pilot resource booking system.
- ASEAN region's service owner for Senseye, a scalable predictive maintenance platform.

### Siemens Mobility

DATA SCIENTIST

Singapore

Sep. 2021 - June 2022

- Associated with the Rail Enterprise Asset Management System (REAMS) data analytics team.
- Responsible for reliability engineering modules in REAMS.
- Built statistical models for analyzing the effect of predictive maintenance and shifting preventive maintenance on reliability metrics.
- Developed long-term failure rate forecast models with deterioration effects for renewal planning. Used the same forecast to assess the associated risk by incorporating the consequence of the failure.

### Siemens Advanta Consulting

DATA SCIENTIST

Singapore

June 2019 - Aug. 2021

- Worked on pilot projects and proof of concepts in the field of advanced analytics and machine intelligence.
- Developed a dialysis machine fault detection system with acoustic and vibration sensors for a leading healthcare service provider. Exploited data-centric approaches and self-supervised representation learning to recognize failures.
- Implemented an agent to summarize contracts utilizing language models and few-shot learning.
- Developed computer vision modules involving object matching, optical flow, and video streaming to achieve smart aquaculture.
- Led the exploratory analysis to get operational insights for a major power service provider. Developed visualization dashboards for the same and used unsupervised methods to find abnormal KPIs.
- Automated the process of building knowledge graphs from natural language by extracting relevant information. Utilized the same for complaint analysis and data-driven diagnostics.
- Performed survival analysis focusing on the failure of the air supply system, enabling predictive maintenance for an asset management system.

## GetVu

Bangalore, India

Co-FOUNDER & CTO

July 2015 - Mar. 2018

- GetVu is a software solutions provider for smart glasses like Epson BT200 and Microsoft HoloLens.
- Developed the initial version of a smart glass augmented reality solution called PikVu for improving the warehouse picking process.
- Built the client side of RemoteVu, a smart glass video-calling application.
- Developed augmented reality applications for GetVu's ARHeadset utilizing hand gesture control.
- Principal part of GetVu's R&D team, responsible for projects like Social VR, EasyG, etc.
- Developed applications for Microsoft HoloLens, Google Tango, Leap Motion, Intel Recon Jet Pro, Sony SmartEyeGlass, ODG R6 & R7, Epson BT200, RealWear HMT-1, Oculus Rift and Google Cardboard.

## ACHIEVEMENTS

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2022	<b>Botbuilder Hackathon Winner</b> , Siemens Chatbot Hub	Singapore
2021	<b>Werner von Siemens Award - Spotlight</b> , Siemens	Singapore
2015	<b>Selected for River Accelerator II</b> , Rothenberg Ventures	San Francisco, USA
2015	<b>Outstanding Student Award</b> , Amrita Vishwa Vidyapeetham	Coimbatore, India
2015	<b>TIDE Innovation Award</b> , Amrita TBI	Bangalore, India
2014	<b>Selected for LEAP AXLR8R</b> , SOSV	San Francisco, USA

## SELECTED PROJECTS

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### Twiloc - Location Prediction Using Tweets

NATIONAL UNIVERSITY OF SINGAPORE

- TwiLoc investigates the feasibility of geographically locating Twitter users based solely on tweet content.
- TwiLoc exploits deep learning techniques like LSTM and RNN for understanding the dialect differences across geographies.

### DDQN Agent For Flappy Bird

NATIONAL UNIVERSITY OF SINGAPORE

- Developed a reinforcement learning agent for side-scrolling games like FlappyBird, and PixelCopter.
- This project is an implementation of Double Deep Q-Learning Network using Keras and OpenAI Gym.

## SELECTED PUBLICATIONS

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2020	<b>Language Model like Pre-Training for Acoustic Data</b> , Towards Data Science
2019	<b>Entity Linking: A primary NLP task for Information Extraction</b> , Analytics Vidhya
2019	<b>Deep Learning for Survival Analysis</b> , Towards Data Science

## SELECTED COURSES

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NATIONAL UNIVERSITY OF SINGAPORE

Neural Networks and Deep Learning | AI Planning and Decision Making | Knowledge Discovery and Data Mining | Data Fitting and Optimization Algorithms | Text Mining | Uncertainty Modelling in AI | Visual Computing | Intelligent Systems and Techniques | Distributed Systems

ONLINE

MLOps Specialization, deeplearning.ai, Coursera | Generative AI with Large Language Models, AWS, Coursera | Deep Learning Specialization, deeplearning.ai, Coursera | Mining Massive Datasets, Stanford, edX | Data Visualization Specialization, UC Davis, Coursera | Machine Learning, Stanford, Coursera | Web of Data, EIT Digital, Coursera

## ADDITIONAL INFORMATION

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2022	<b>Professional Membership MSCS</b> , Singapore Computer Society	Singapore
2019	<b>Contributing Writer</b> , Towards Data Science & Analytics Vidhya	Singapore
2015	<b>Presented PikVu</b> , IEEE Digital Senses Initiative Conference	San Francisco, USA
2014	<b>Exhibited GetVu's AR Headset</b> , Augmented World Expo	San Francisco, USA
2014	<b>HackerRank Campus Ambassador</b> , Amrita Vishwa Vidyapeetham	Coimbatore, India