


# M BADRI NARAYANAN

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## EDUCATION

**Sri Sivasubramaniya Nadar (SSN) College of Engineering (Autonomous),**  
**Affiliated to Anna University, Chennai, India**

**August 2018 – May 2022**

*B.Tech. Information Technology*

**CGPA: 8.955 / 10.00**

*Graduated First Class with Distinction*

**Courses:** Machine Learning, Artificial Intelligence, Probability, Statistics, Data Structures and Algorithms.

**Vidya Mandir Senior Secondary School, Chennai, India**

**June 2017 – June 2018**

*Grade 12, Computer Science Stream*

**Grade: 94.4%**

## SKILLS

**Programming Languages:** Python, C, C++

**Frameworks and Tools:** PyTorch, TensorFlow, Keras, Git, Docker, AWS

**Libraries:** NumPy, pandas, scikit-learn, NLTK, spaCy, OpenCV



## PUBLICATIONS

**Fake News Detection using a Deep Learning Transformer Based Encoder-Decoder Architecture**

 [Code](#)

*Submitted for review in Journal of Intelligent & Fuzzy Systems, 2023*

*Journal indexed in Science Citation Index Expanded.*

**End-to-End Speech Recognition of Tamil Language**  [Paper](#)  [Code](#)

*Intelligent Automation and Soft Computing, 2021*

*Journal indexed in Science Citation Index Expanded.*

**Sign Language Translation using Multi Context Transformer**  [Paper](#)  [Code](#)

*20<sup>th</sup> Mexican International Conference on Artificial Intelligence (MICA), Mexico City, 2021*

*Paper published in Springer Lecture Notes in Artificial Intelligence (LNAI) proceedings.*

*Won the 3rd best paper award.*

## EXPERIENCE

**Associate Engineer - AI/ML**

**July 2022 – Present**

*Qualcomm*

*Hyderabad, India*

→ Contributing towards the development and maintenance of SNPE (SnapDragon Neural Processing Engine).

→ Working to improve the testing pipelines for running state-of-the-art deep neural networks on Snapdragon SoCs.

→ Introduced evaluation frameworks and metrics for machine learning models to enhance their efficiency and accuracy.

**Skills:** Edge Machine Learning, Python, Docker

**Advisor:** Mrs. Archana Patil, Engineer - Staff / Manager

**Part-Time Undergraduate Research and Teaching Assistant**

**February 2020 – December 2022**

*Bright Academy (Previously Solarillion Foundation)*

*Chennai, India*

→ Collaborated on Terms of Service Classification, an NLP problem statement that uses a two-stage knowledge distillation DL approach on low-resource devices with cutting-edge architectures like BERT to find unfair Terms of Service terms.

→ Lead the NLP group that presented the “Sign Language Translation using Multi Context Transformer” paper at the 20<sup>th</sup> Mexican International Conference on Artificial Intelligence (MICA), Mexico City, 2021.

→ To translate the input sign video, Multi Context Transformer architecture employs transformers and runs on batched video inputs. Our model achieved comparable results with the state-of-the-art model while reducing the parameters significantly to enable the deployment of the model in more accessible devices.

→ Guided 5+ students in research, evaluated assignments and projects in Python and Machine Learning.

→ Oversaw the website development and managed the server for our research group.

→ Wrote bots for posting office hours and creating polls.

**Skills:** Research, NLP, CV, PyTorch, Tensorflow, NumPy, pandas, scikit-learn, NLTK, spaCy, OpenCV

**Advisor:** Mr. Vineeth Vijayaraghavan, Director - Research and Outreach

### Student Researcher

December 2020 – April 2022

Sri Sivasubramaniya Nadar (SSN) College of Engineering

Chennai, India

→ Introduced a novel architecture for Fake News Detection based on Transformers, which considers the title and content of a news article to determine its integrity. Our work is currently under review in a Science Citation Index Expanded journal.

→ Developed a robust and cost-effective automatic speech recognition model for Tamil language leveraging Baidu's Deep Speech architecture. Our work was published in the Science Citation Index Expanded journal: *Intelligent Automation & Soft Computing*, 2022.

**Skills:** Research, NLP, Speech Signal Processing, PyTorch, Tensorflow, NumPy, pandas, scikit-learn, NLTK, spaCy

**Advisor:** Dr. Shahina A - Professor & Dr. Gayathri K S - Assistant Professor, Department of IT

### Machine Learning Intern

March 2021 – June 2022

Mad Street Den (Vue.ai)

Chennai, India

→ Developed a tool for document processing as part of the NLP core group using an OCR engine, image processing, and NLP techniques to process unstructured data and convert them to a structured format.

→ Built Computer Vision models to serve educational recommendations.

**Skills:** NLP, CV, Python, PyTorch, Tensorflow, NumPy, pandas, scikit-learn, NLTK, spaCy, OpenCV, AWS

**Advisor:** Mr. Anand Chandrasekharan, Founder and CTO

### Summer Intern

June 2020 – August 2020

Prodiان Info Tech Pvt Ltd

Chennai, India

→ Applied unsupervised ML Algorithms to explore different patterns that affect a cricket match.

**Skills:** Machine Learning, Python, NumPy, pandas, scikit-learn

**Advisor:** Mr. Vijay Karthik, Founder and CEO

## SELECTED PROJECTS

### Terms of Service Classification [Code](#)

June 2022 - December 2022

Identify unfair Terms of Service clauses using a two-stage knowledge distillation DL algorithm on devices with minimal resources using state-of-the-art architectures like BERT.

### Freelance Projects

October 2020 – February 2021

Undertook projects from Freelancer.com in Natural Language Processing and Computer Vision. Completed a project with a US-based company "EasyComtec" to predict the ICD diagnosis code given a doctor report using Transformer architecture.

### Clickbait Classification [Code](#)

August 2020

Classifying clickbaits: articles with potentially misleading titles, using a state-of-the-art NLP architecture.

### Object Detection Using YOLO v3 [Code](#)

August 2020

Detecting everyday objects using the YOLO v3 network with a custom dataset.

## VOLUNTEERING AND RESPONSIBILITIES

→ Conducted classes in NLP and CV, evaluated ML and DL assignments as the ML head of PROCODE - the official coding club of Department of Information Technology.

→ Served as the class representative for the entire duration of my undergraduate study.

→ Volunteered with Chennai Volunteers to teach spoken English classes for socio-economically weaker students.

## AWARDS AND HONOURS

→ Awarded the **Merit Scholarship** for my academic performance in the 3rd year of my undergraduate study.

→ Won the **3rd best paper** award for "**Sign Language Translation using Multi Context Transformer**" at the 20<sup>th</sup> Mexican International Conference on Artificial Intelligence (MICA), 2021.

→ Part of the collegiate cricket team which won the Manipal Academy for Higher Education (MAHE) cricket tournament.