M Badri Narayanan

🌐 mbadrinarayanan.com ⬜ MBadriNarayanan in mbadrinarayanan ✉ immbadri3@gmail.com
📱 +918220584258 📍 Hyderabad, Telangana, India

EDUCATION

Sri Sivasubramaniya Nadar College of Engineering (Autonomous), **August 2018 – May 2022**
Affiliated to Anna University, Chennai, India
B.Tech in 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 IOS Press - 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**
20th *Mexican International Conference on Artificial Intelligence (MICAI), Mexico City, 2021*
Paper published in Springer Lecture Notes in Artificial Intelligence (LNAI) proceedings.
Won the 3rd best paper award.

WORK EXPERIENCE

Associate Engineer - AI/ML **July 2022 – July 2023**
Qualcomm *Hyderabad, India*
→ Contributing towards the development and maintenance of SNPE (SnapDragon Neural Processing Engine).
→ Working to improve the testing pipelines for running deep neural networks on SnapDragon SoCs.
→ Introduced evaluation frameworks and metrics for ML models to enhance efficiency and accuracy.
Skills: Edge Machine Learning, Python, Docker
Advisor: Mrs. Archana Patil, Engineer - Staff / Manager

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

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 20th *Mexican International Conference on Artificial Intelligence (MICAI),* 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 model deployment 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 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 the Science Citation Index Expanded journal: *IOS Press - Journal of Intelligent & Fuzzy Systems, 2023.*

→ 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

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

→ Reviewed manuscripts for the Science Citation Indexed Journal: IOS Press - Journal of Intelligent & Fuzzy Systems.

→ 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 20th Mexican International Conference on Artificial Intelligence (MICAI), 2021.