

BADRI NARAYANAN MURALI KRISHNAN

mbadrinarayanan.com | github.com/MBadriNarayanan | linkedin.com/in/mbadrinarayanan |
bmuralikrish@wisc.edu | Madison, United States of America

OBJECTIVE

Detail-oriented and diligent professional with a deep passion for machine learning. Seeking a **Machine Learning internship role** to apply my meticulous approach, and perseverance to develop impactful real-world solutions.

EDUCATION

University of Wisconsin-Madison

Master of Science - Computer Sciences

Courses: Artificial Neural Networks, Artificial Intelligence, Big Data Systems, Data Clean & Integration for DS.

Sep 2023 – May 2025 (Expected)

Madison, WI

Sri Sivasubramaniya Nadar College of Engineering (Autonomous)

Affiliated to Anna University

B.Tech in Information Technology

Graduated First Class with Distinction.

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

Aug 2018 – May 2022

Chennai, India

CGPA: 8.95 / 10.00

SKILLS

Programming Languages: Python, C, C++

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

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

WORK EXPERIENCE

Master's Research

University of Wisconsin-Madison

→ Working to deploy LLMs on low-power devices using methods such as Quantization and Distillation.

→ Formulated an RNN-based approach for trajectory prediction / mini localization using Wifi signal data.

Skills: Large Language Models, Recurrent Neural Networks, pandas, Git

Advisor: Dr. Suman Banerjee, David J. DeWitt Professor

Sep 2023 – Present

Madison, WI

Associate Engineer - AI/ML

Qualcomm

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

→ Improved 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

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

Jul 2022 – Jul 2023 (1 Yr)

Hyderabad, India

Machine Learning Intern

Mad Street Den (Vue.ai)

→ 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

Manager: Mr. Anand Chandrasekharan, Founder and CTO

Mar 2021 – Jun 2022 (1 Yr 4 Mos)

Chennai, India

Part-Time Undergraduate Research Assistant

Bright Academy (Previously Solarillion Foundation)

→ Lead the NLP group that aims to translate the video input of a German sign language translator depicting the weather, into cohesive and accurate German sentences.

→ We achieved **98.19%** score retention in the ROUGE-L score and **86.65%** in the BLEU-4 score, while simultaneously achieving a **30.88%** reduction in model parameters.

→ 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.

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

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

Feb 2020 – Jun 2022 (2 Yrs 5 Mos)

Chennai, India

Student Researcher

Dec 2020 – Apr 2022 (1 Yr 5 Mos)

Sri Sivasubramaniya Nadar College of Engineering

Chennai, India

→ Introduced a novel architecture for Fake News Detection based on Transformer architecture, which considers the title and content of a news article to determine its integrity.

→ Our work achieved an accuracy of **74.0%** on a subset of the NELA-GT 2020 dataset. To our knowledge, Fake-News Transformer is the first published work considering both title and content for evaluating a news article.

→ Developed a robust and cost-effective automatic speech recognition model for the Tamil language leveraging Baidu's Deep Speech architecture. Our work was compared against Google's speech-to-text API, Our work was compared against Google's speech-to-text API, outperforming it by **20%**.

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

ACADEMIC PROJECTS

Optimizing Natural Language Understanding: Fine-tuning Mistral 7B

Feb 2024 - Feb 2024

This project focuses on fine-tuning Mistral 7B LLM on the Samantha question-answering dataset. It aims to adapt the Mistral model to conversational and contextual question answering.

Terms of Service Classification

May 2022 - Jun 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.

Clickbait Classification

Aug 2020

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

PUBLICATIONS

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

M Badri Narayanan, Arun Kumar Ramesh, Gayathri K S, Shahina A

IOS Press - Journal of Intelligent & Fuzzy Systems, 2023 (Science Citation Index Expanded Journal.)

End-to-End Speech Recognition of Tamil Language

Mohamed Hashim Changrampadi, A Shahina, **M Badri Narayanan**, A Nayeemulla Khan

Intelligent Automation and Soft Computing, 2021 (Science Citation Index Expanded Journal.)

Sign Language Translation using Multi Context Transformer

M Badri Narayanan, K Mahesh Bharadwaj, G R Nithin, Dhiganth Rao Padamnoor, Vineeth Vijayaraghavan

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.

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.

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.