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** role to apply my meticulous approach, and perseverance to develop impactful real-world solutions.

EDUCATION

University of Wisconsin-Madison Sep 2023 – May 2025 (Expected)
Master of Science - Computer Sciences *Madison, WI*
<u>Courses:</u> Artificial Neural Networks, Artificial Intelligence.

Sri Sivasubramaniya Nadar College of Engineering (Autonomous) Aug 2018 – May 2022
Affiliated to Anna University *Chennai, India*
B.Tech in Information Technology **CGPA: 8.95 / 10.00**
Graduated First Class with Distinction.
<u>Courses:</u> Machine Learning, Artificial Intelligence, Probability, Statistics, Data Structures and Algorithms.

SKILLS

Programming Languages: Python, C, C++
Frameworks and Tools: PyTorch, TensorFlow, Git, Docker, AWS
Libraries: NumPy, pandas, scikit-learn, NLTK, spaCy, OpenCV

WORK EXPERIENCE

Associate Engineer - AI/ML Jul 2022 – Jul 2023 (1 Yr)
Qualcomm *Hyderabad, India*
→ 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

Machine Learning Intern Mar 2021 – Jun 2022 (1 Yr 4 Mos)
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
Manager: Mr. Anand Chandrasekharan, Founder and CTO

Part-Time Undergraduate Research and Teaching Assistant Feb 2020 – Dec 2022 (2 Yrs 11 Mos)
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.
Skills: Research, NLP, CV, PyTorch, Tensorflow, NumPy, pandas, scikit-learn, NLTK, spaCy, OpenCV
Advisor: Mr. Vineeth Vijayaraghavan, Director - Research and Outreach

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 was published 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

ACADEMIC PROJECTS

Trajectory Prediction using a Mini Localization based ML approach   **Sep 2023 - Present**
Working with **Dr. Suman Banerjee** to create a customized trajectory prediction engine using machine learning techniques based on historic and current localized user data.

Terms of Service Classification   **Jun 2022 - Dec 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.

Object Detection Using YOLO v3   **Aug 2020**
Detecting everyday objects using the YOLO v3 network with a custom dataset.

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.

→ 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.