Sathvik Meripe

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EDUCATION

Indian Institute of Technology Dharwad

Computer Science and Engineering - CGPA: 8.70

Dharwad, Karnataka Dec 2022 – Apr 2026

Projects

Evolutionary Vision Transformer Research

Deep Learning Research

- Explored EvolutionViT, a patch pruning framework for accelerating Vision Transformers (ViT) through multi-objective optimization.
- Studied existing **pruning methods** to balance cost and performance for resource-constrained edge devices.
- Proposed and implemented a novel **initialization heuristic** to guide the evolutionary search, enhancing the efficiency of the patch pruning optimization.
- Implemented all ViT pruning experiments in PyTorch for model acceleration and structured analysis.

Continual Learning and Loss of Plasticity Research

Deep Learning Research

- Investigated **Continual Learning** and **Loss of Plasticity** in neural networks by re-implementing and analyzing a novel training algorithm on the **MNIST dataset**.
- Implemented Continual Backpropagation (CBP) and benchmarked its performance against standard backpropagation, validating its superior plasticity retention.
- Replicated experiments across 800 sequential learning tasks, conducting **statistical analysis** on performance metrics to verify the paper's findings.
- Utilized **PyTorch** for model implementation, experimental design, data preprocessing, and result visualization.

Recommendation System

Machine Learning

- Built a Content-Based Filtering module for a Movie Recommender to provide personalized suggestions.
- Implemented robust **preprocessing pipelines** including text normalization, stopword removal, and lemmatization to clean and standardize data.
- Applied algorithms such as **Bag of Words**, **TF-IDF**, and **BM25** using **scikit-learn** to analyze movie data and compute similarity scores.
- Assisted integrating the ML model with the front-end interface built using HTML, CSS, and JavaScript.

TECHNICAL SKILLS

Programming Languages: C, C++, Python

Technologies: HTML5, React, Tailwind CSS, SQL, NumPy, Pandas, LATEX, Matplotlib

ACHIEVEMENTS

- Awarded AP Grade, in Advanced Topics in Deep Learning Course (CS707), IIT Dharwad.
- 4th place (out of 200 participants), in Summer Of Innovation by Coding Club, IIT Dharwad.

KEY COURSES

Computer Science: Data Structures and Algorithms, Software Systems, Computer Architecture, Operating Systems, Computer Networks, Database Management System, Deep Learning, Advanced Topics in Deep Learning

Mathematics: Linear Algebra, Calculus, Discrete Mathematics, Probability, Data Analysis, Theory of Computation

Extracurriculars

- Outreach Team Member, PARSEC Annual Techfest, IIT Dharwad
- Participant at Sleepless Coding Saga, Hackathon on Devfolio.