S I Harini

Goa, India

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Education

BITS Pilani K.K. Birla Goa Campus — *Goa,India*

Bachelor of Engineering — *Nov 2020 - May 2024*

- **CGPA:** 8.54/10
- **Minor in Data Science**
- **Courses:** Linear Algebra, Differential Calculus, Probability and Statistics, Data Structures and Algorithms, Discrete mathematical structures, Object Oriented Programming, Database systems, Meta Learning, Artificial Intelligence, Machine Learning, Foundations of Data Science, Applied Statistical Methods, Deep Learning, Reinforcement Learning
- **Teaching:** Meta Learning, Object Oriented Programming

Experience

Autonomous Agents Lab, Stanford University — *Remote*

Research Intern — *Aug 2023-Jan 2024*

- Developed FACTORSIM to generate full simulations in code from natural language input for training intelligent agents in game-playing and robotics.
- Introduced a generative simulation benchmark to assess accuracy and effectiveness in facilitating zero-shot transfers in reinforcement learning.
- **Supervised by:** Dr. Nick Haber.

Adobe Media and Data Science Research — *USA*

Research Intern — *Jun 2023- Aug 2023*

- Worked on modeling and predicting the memorability of advertisements
- Developed a scalable method for generating high-quality memorable ads by leveraging automatically annotated data.

APPCAIR Lab, TCS Research — *Goa, India*

Student Researcher — *July 2022 - May 2023*

- Worked on solving the Abstract Reasoning Challenge (ARC) with neurosymbolic techniques.
- Used meta reinforcement learning and ILP techniques to model financial markets.
- Collaborating with a team of researchers from TCS Research and **supervised by:** Dr. Ashwin Srinivasan.

Google Summer of Code — *Remote*

Contributor — *June 2022 - Sept 2022*

- Contributed to the development of ArviZ, a powerful tool for exploratory analysis of Bayesian models, and Gen.jl, a general-purpose probabilistic programming system with programmable inference embedded in Julia.
- Developed a compatibility layer for using ArviZ visualization functionality with Gen traces, to facilitate integration between the two systems and improve their overall functionality.
- **Supervised by:** Ravin Kumar and Seth Axen.

Contenterra — *Hyderabad, India*

Summer Intern — *May 2022 - July 2022*

- Automated complex web testing processess to enhance the quality of DesiDMS, an application developed by Contenterra.

Computational Linguistics and Social Networks Lab — *Goa, India*

Student Researcher — *Jan 2022 - May 2022*

- Built a model for code search with a simple encoder-decoder architecture for C, Python and Java.
- Adapted CodeBert(trained on Java,Python,etc.) to C language.
- **Supervised by:** Dr. Swati Agrawal.

Publications

Transsuasion: Measuring And Improving Behavior-Transfer And Persuasion Abilities Of Generative Models

Under Review at NeurIPS'24

Somesh Singh, Yaman Kumar*, **S I Harini***, Balaji Krishnamurty*

FACTORSIM: Generative Simulation via Factorized Representation

Under Review at NeurIPS'24

Fan-Yun Sun, **S I Harini***, Angela Yi, Yihan Zhou, Alex Zook, Jonathan Tremblay, Logan Cross, Jiajun Wu, Nick Haber*

LLaVA Finds Free Lunch: Teaching Human Behavior Improves Content Understanding Abilities Of LLMs

Under Review at NeurIPS'24

Somesh Singh, **S I Harini***, Yaman Kumar, Balaji Krishnamurty, Veeky Baths*

Long-Term Ad Memorability: Understanding and Generating Memorable Ads

Under Review at ACM MM'24

S I Harini, Somesh Singh*, Yaman Kumar*, Aanisha Bhattacharya, Veeky Baths, Changyou Chen, Rajiv Ratn Shah, Balaji Krishnamurty*

Neuro-symbolic Meta Reinforcement Learning for Trading *Washington DC, USA*

The AAAI-2023 Workshop On Multimodal AI For Financial Forecasting

***S I Harini**, Gautam Shroff, Ashwin Srinivasan, Prayushi Faldu, Lovekesh Vig*

Projects

Meta learning using JAX *Goa, India*

Open Source Project *Nov 2021 - Apr 2022*

- Implementing various Meta Learning alogrithms in JAX like MAML,FoMAML,etc.
- Benchmarked standard algorithms on few shot learning tasks.
- **Code can be found at: [link]**

DualNet for Continual Learning *Goa,India*

Course Project *Mar 2022 - Apr 2022*

- Implemented the paper, DualNet from NeurIPS '21, which proposes a new architecture for continual learning.
- Extended the model to be used on financial market data and achieved promising results.
- Used Mixup and other techniques to further improve the performance of the model.
- **Code can be found at: [link]**

ATP Binding sites in protein synthesis *Goa,India*

Project supervised by Dr. Swati Agrawal *Jan 2022 - Apr 2022*

- Developed an ensemble model using CNNs and LightGBM for predicting ATP binding sites in protein sequences.
- Explored various feature engineering techniques to extract important structural features from the sequences, including secondary structure, physicochemical properties, and evolutionary conservation.
- Achieved competitive performance on benchmark datasets, demonstrating the potential of the proposed approach for understanding protein function.

Source code synthesis *Goa,India*

Project supervised by Dr. Swati Agrawal *Jan 2022 - Apr 2022*

- Built a preliminary model for Code search, with a simple encoder decoder architecture which computes the cosine similarity of the embeddings for searching.
- Finetuned the CodeBERT model for Code Search on C/C++.
- Trained and finetuned a code clone detection model across multiple languages.

Skills

Languages Python, Java, C, C++, Julia.

Toolkits Pandas, PyTorch, NumPy, Scikit-learn, Tensorflow, Linux

Miscellaneous Linux, Shell (Bash/Zsh), LaTeX, Git.