Sriharsha Hatwar

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Education

University of Massachusetts Amherst **Aug. 2022 – May 2024**
MS in Computer Science | ***Courses:*** *Reinforcement learning, Advanced NLP, Advanced Machine Learning* *Amherst, Massachusetts*

PES University (Formerly PESIT) **July 2014 – July 2018**
Bachelor of Technology in Computer Science | ***Honours*** *: First Class with Distinction* *Bengaluru, Karnataka*

Publication

Author Unknown : Evaluating Performance of Author Extraction Libraries on Global Online News Articles (In Review)
Sriharsha Hatwar*, Virginia Partridge, Rahul Bhargava, Fernando Bermejo* *ICWSM 2024*

Beyond the Imitation Game: Quantifying and extrapolating the capabilities of language models **(Accepted)**
Aarohi Srivastava, Abhinav Rastogi, .. , ***Sriharsha Hatwar****, .., Ziyi Wu* *TMLR 2023*

Lead Artist Identification from Music Videos using Auto-encoders **(Accepted)**
Prajwal Chandrashekaraiah, Pranav kashyap, ***Sriharsha Hatwar****, Srinivasa Murthy* *SOMMA 2019*

Technical Skills

Programming Languages: Python, Java, Haxe, C++, C, Javascript
Databases & Tech Stack: PostgreSQL, Redis, Flask, Splunk, AWS (EC2, DynamoDB), Spring, Docker, dvc, psycopg2, OpenAPI
Machine learning tools: PyTorch, Pandas, HuggingFace, Scikit-learn, PySpark, Unity, LLMs
Build / Version control: Git, Perforce, Gradle

Experience

Cohere **Jan 2024 – Present**
Student researcher *Amherst, Massachusetts*

- As part of an industry practicum at UMass [LINK], I am working with Pat Verga (From Cohere) on investigations in compressed context windows, specifically focusing on discrete prompt compression techniques.
- Implemented various baseline models, including reinforcement learning-based compression techniques utlizing large language models (LLMs) such as Mistral, Gemma. Currently, researching on enhancing prompt compression from Information Theory principles.

Mediacloud & Center for Data Science, Umass Amherst **May 2023 – August 2023**
Data science Intern *Amherst, Massachusetts*

- Developed a data pipeline in DVC for multilingual author extraction in news articles, achieving $\sim$ 0.7 F1 score with custom NER models for low and high resource languages using ROUGE metric.
- Implemented an evaluation suite, consisting of edit distance and ROUGE scores for custom transformer language and open-source libraries. Findings are currently under review at AAAI-ICWSM.

Tivo (Part of Xperi) **July 2018 - Aug 2022**
Software engineer - II - (Client engineering) *Bengaluru, Karnataka*

- Rearchitected an existing **AWS Lambda Service** to store the recent video provider and implemented a client feature to launch the provider (Ex: HBO, Prime) app directly when the asset (Series/Episode) is selected for streaming.
- Implemented and optimized the IP Linear playback Retry mechanism with an exponential back-off policy with Splunk dashboard and unit testing in place. Decreased streamer downtime by $\sim$ 20%, thereby enhancing user experience.
- Redesigned TvBeacon Network service in C++ for in-home device communication, leveraging **ProtoBuf** for optimized data serialization and reduced the round trip by 50% between mini and host STB impacting 10k+ devices.

Associate Software engineer - (Client Engineering)

- Exposed to **haxe cross-compiler toolkit**, which allowed to target both Linux STBs and modern android-based apps.
- Implemented a new design of deeplinking of assets in streamers to third-party apps using **Android Intent API** and eliminated the metadata team's effort of manually creating deeplinking strings.
- Redesigned **UI Progress bar** widget across screens and improved the UI experience of the played asset to the end users.

Veveo (Part of Tivo) **Jan 2018 - Jun 2018**
Software engineering Intern - (Knowledge Graph team) *Bengaluru, Karnataka*

- Extracted and enriched metadata from wiki-article category sections, advancing media entity metadata. Implemented a rule-based engine and parallelized Knowledge Graph (KG) creation using MapReduce, resulting in efficient processing.
- Enhanced Knowledge Graph (KG) through strategic use of smart tags in category nodes, employing a two-pass mechanism. Achieved a notable 9% improvement in media entity metadata.

Honours and Achievements

- One of the 13 recipients who obtained the Data Science for Common Good Fellowship. [DS4CG Fellowship].
- Xperi Hackathon 2020 - Popular choice award - Built an Automatic censored content skip for Tivo Streamer units.
- Attained **bronze medal** for **top 8%** private leader board in the Kaggle competition - **Tweet Sentiment Extraction** - [LINK]

Projects

Few-shot style transfer in low-resource settings - Pre-trained **mT5** with 3 objectives on Samananthar & mc4 datasets, achieved 60% human-level accuracy in few-shot style transfer for newly procured dataset in Hindi, Marathi, & Bengali using 3-5 style sentences.

Evaluation of Environments with continuous state spaces - Reinforcement learning - Implemented Actor-critic algorithms and PPO algorithm, evaluated against Lunar lander, Cartpole and Acrobot agents in Open AI gym.

Scalability Check For ML System Predicting Flight Delays Built an end-to-end data pipeline in PySpark for predicting flight delays, consisting of pre-processing engines and 7 Big Data and Machine Learning models including SOTA models, and compared their scalability and performance, in a team of three; was awarded Best Project Presentation award (COURSE : COMPSCI 532)