# Sriharsha Hatwar

✉ shatwar@umass.edu    🏠 Website : sriharsha-hatwar.github.io    in Sriharsha-hatwar    ⬡ Sriharsha-hatwar

## 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**
*Graduate 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)