

Proposal Format

Name	K S H V Sai Hari Krishna
Email ID	saishanmuk872@gmail.com
Phone Number	7075811975
GitHub ID	https://github.com/KSHVSaiHariKrishna
Discord ID	https://discord.com/channels/@me/948622800556544053
Current occupation	Student
Education Details	Vellore Institute of Technology-AP CSE with AI&ML specialization
Technical skills with level <i>(Mention tech skills/languages known/UI-UX and level - Novice/Intermediate/Expert)</i>	Programming Languages: Python: Intermediate Java: Intermediate JavaScript: Novice SQL: Novice Web Development: HTML&CSS: Novice Flask (Backend): Novice Data Analysis and Machine Learning:

	NumPy: Intermediate Pandas: Intermediate ScikitLearn: Intermediate TensorFlow: Intermediate PyTorch: Intermediate Keras: Intermediate Database Management: MySQL: Intermediate Cloud Services: Amazon Web Services (AWS): Novice Version Control: GitHub: Intermediate
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Title:

Auto Subtitler for Indian Languages

Summary

The Auto Subtitler for Indian Languages project, under the BIRD (Book Initiative for Reading and Development) program, aims to boost Same Language Subtitling (SLS) adoption among Indian content creators. Powered by machine learning and Python, it targets aiding 200 million weak readers and 30 million with accessibility needs by generating SRT (SubRip Subtitle) files for Indian language videos.

This tool generates SRT files from video and text scripts, initially focusing on Tamil, Telugu, and Kannada. Goals range from 60% to 90% timing accuracy, with midpoints at 70%. Inputting UTF-8 encoded videos and scripts, the tool outputs SRT files with timecodes for each script line. VLC media player validates file accuracy.

Categorized under Accessibility and Machine Learning, the project welcomes contributions from ML and Python experts. Mentored by @arvind-planetread, it aims to enhance Indian language content accessibility.

Project Detail

Project Overview:

a. Understanding of the project:

The goal of the Auto Subtitler for Indian Languages project is to provide a powerful tool that will enable Same Language Subtitling (SLS) in order to increase reading exposure for people with accessibility concerns. The goal is to generate SRT files from video and text scripts in Indian languages (Tamil, Telugu, and Kannada at first) using machine learning and Python.

b. Problems:

It can be difficult to guarantee exact timing correctness in SRT files when dealing with different languages and video sources. Another major obstacle is managing the complexities of different accents and linguistic variations.

c. Solutions:

The project may entail developing robust text processing algorithms to account for linguistic variations, training machine learning models on large datasets, and rigorous testing with a variety of video sources to ensure the tool's adaptability and dependability in order to address timing accuracy issues.

Implementation Details with Timelines:

a. Milestone 1 (Weeks 1-4):

Provide the essential features needed to handle text and video inputs, extract relevant text data, and produce the first SRT files. To improve timing accuracy, start training machine learning models.

b. Milestone 2 (Weeks 5-8):

Provide the essential features needed to handle text and video inputs, extract relevant text data, and produce the first SRT files. To improve timing accuracy, start training machine learning models.

c. Milestone 3 (Weeks 9-12):

Complete the tool's capabilities, paying special attention to performance enhancement. Undertake comprehensive testing on various language sets and video sources to guarantee dependability and adaptability. Get everything ready for the project's launch, including thorough documentation for assistance and direction from users.

Availability

The duration of the coding period is from June to September. Please share your availability in detail

Number of hours available to dedicate to this project per week	20 hours
Do you have any other engagements during this period ? (projects/internships)	no

Personal Information

About Me:

Name: K S H V Sai Hari Krishna

Contact: 7075811975 | saishanmuk872@gmail.com

Education: B. Tech in Computer Science and Engineering with AI & ML specialization, Vellore Institute of Technology-A. P (2021-25), CGPA: 8.16/10

Experience: Artificial Intelligence and Machine Learning Extern at SmartInternz, with projects in mental health prediction, melanoma detection, sentiment analysis, and autonomous robot development.

Technical Skills: Proficient in Python, Java, SQL, Flask, HTML&CSS, NumPy, Pandas, ScikitLearn, TensorFlow, PyTorch, Keras, MySQL, AWS, and GitHub.

Certifications: Artificial Intelligence and Machine Learning Extern certificate.

Motivation: My motivation to apply for this project stems from my passion for leveraging AI and machine learning to address real-world challenges. I am particularly drawn to the opportunity to contribute to enhancing accessibility to content in Indian languages, aligning with my commitment to leveraging technology for social impact and empowerment.

Previous Experience/Open Source Projects :

In this section, I've highlighted some of my relevant projects and experiences that align with the technical stack and goals of the Auto Subtitler for Indian Languages project:

Mental Health Prediction System:

Description: Developed a Mental Health Prediction System utilizing classification algorithms such as Logistic Regression, KNN, Decision Tree, Random Forest, AdaBoost, Gradient Boost, and XGBoost. Oversaw all project phases, encompassing data preprocessing, model training, and local deployment through Flask.

Link: Not applicable (Internal project)

Deep Learning Model for Precise Melanoma Prediction:

Description: Developed a deep learning model for melanoma skin cancer prediction using convolutional neural networks. Utilized extensive datasets for training and validation, achieving high accuracy in distinguishing melanoma from benign skin lesions.

Link: Not applicable (Internal project)

Sentiment Analysis on PUBG Reviews using LSTM Model:

Description: Conducted sentiment analysis on PUBG reviews using NLP and LSTM models to understand player sentiment, classifying reviews as positive, negative, or neutral. Emphasized the significance for game developers in enhancing user experience and addressing concerns.

Link: Not applicable (Internal project)

Autonomous Human-Following Robot Development with Arduino:

Description: Developed an autonomous human-following robot with Arduino and sensor integration. The robot utilized ultrasonic and IR sensors for object detection and navigation, showcasing proficiency in hardware-software integration.

Link: Not applicable (Internal project)

Contribution in C4GT's open community:

In this section answer the questions about your participation in C4GT's open community tickets, provide the screenshot of the leaderboard with your GitHub ID and DPG points earned (if any).

Have you contributed to tickets in C4GT's open community? (Mandatory to answer)	No
Have you successfully completed C4GT's GitHub Classroom Assignment? (Mandatory to answer)	No
Enter your DPG points (Mandatory to answer, Enter 0 if not applicable)	0
Screenshot of leaderboard with your GitHub ID (Mandatory to answer, enter 0 if not applicable)	0