UPES
UNIVERSITY WITH A PURPOSE
RESEARCH & DEVELOPMENT

PROPOSAL FOR शोध SUPPORT FOR STUDENTS

(Under the SHODH program for research)

(A) SUMMARY SHEET:

Project proposal submitted under (tick mark the शोध scheme)

☐ **RISE (Research & Innovation for Science and Engineering)**

☑ **RISoCS (Research & Innovation for Students of Computer Science)**

☐ **RISoM (Research & Innovation for Students of Management)**

☐ **RISoL (Research & Innovation for Students of Law)**

☐ **RISoD (Research & Innovation for Students of Design)**

☐ **RISoL (Research & Innovation for Students of School for Life)**

☐ **RISoHS (Research & Innovation for Students of School Health Sciences)**

☐ **RISoMM (Research & Innovation for Students of School for Modern Media)**

☐ **RISoLS (Research & Innovation for Students of School for Liberal Sciences)**

1. Title:

   Auto Dub using APIs

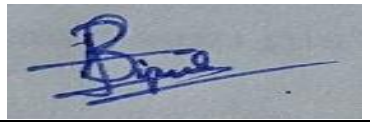
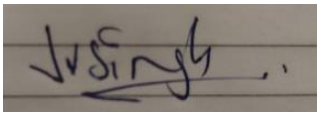
Duration (Months)	Amount
10	60,000

OFFICE PURPOSE

DATE RECEIVED (in R&D Office):

PROPOSAL No.

2. Name and Department of applicants with contact details (email and phone):

*Applicant(s) (Name/Course/Department/SAP ID) & Signature	Mentor(s) (Name/Department) & Signature
Bipul Raj - B. Tech (Computer Science and Engineering) Sap ID – 500084374 E-mail:500084374@stu.upes.ac.in Phone No. - 7051611457 	Dr. Achal Agrawal – Computer Science and Engineering E-mail: - achal.agrawal@ddn.upes.ac.in Phone No: - 9898049902 
Jayendra Vardhan Singh - B. Tech (Computer Science and Engineering) Sap ID – 500082718 E-mail: - 500082718@stu.upes.ac.in Phone No. – 7088345282 	

* A SHODH team will have minimum 2 students and a maximum of 5 students. SHODH team can have amaximum of 2 mentors (For SoE, there is no limit on number of mentors)

Do not put any identifying information in Section (B)

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(B) DETAILS OF PROPOSAL:

OFFICE PURPOSE

DATE RECEIVED (in R&D Office):

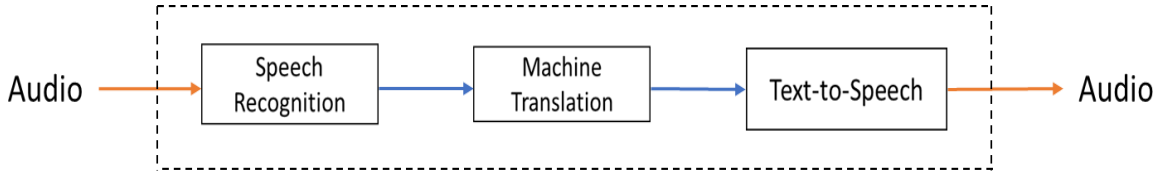
PROPOSAL No.

1. Title (Title should be concise & specific)

   "Auto Dub using APIs"

2. Objectives of the proposal demonstrating contribution to excellence at national level (List pointwise) #

- We are trying to remove language barrier.
- We are trying to create an auto-dubbed software/platform.
- To reduce time dubbing of the video/audio.



3. Expected deliverables of the Proposal (Products/Publications/Patents/ New concept/Spinoff etc.) #

Product- A web interface to simplify the process of dubbing using artificial intelligence.
Publication – benchmarking available APIs for different tasks involved in Automatic Dubbing

4. Importance/highlights (3-5 bullet points) #

- Learners will benefit from dubbing technology, as that will assist them in overcoming their language barriers.
- The viewer can focus their entire attention on the graphics as well as the audio when watching dubbed content. The inability to gaze up and down the screen will be eliminated. As their will be no requirement for subtitles.
- No abbreviation is required. There are no dialogues that may be abbreviated because they must be totally rewritten to convey the same message.

5. Literature Review and advancement: Demonstrate knowledge of (with references (IEEE format) and contribution to the national state-of-the-art in the relevant area#

   Literature Review –
   In [1],[2].[3], they claim speech-to-speech translation between English and various international languages. The aim of our project is to develop speech - to - speech translation b/w English and Indian Native languages. To the best of our knowledge, it is still an open problem. This will enable to convert quality educational content available in English to benefit Indian students. In this project, we will benchmark different cloud platforms (b/w Google Cloud, Microsoft and Amazon AWS) and identify which is the best option for each individual task: speech to text, translation and text to speech in Indian languages.

   References -

   [1] Nakamura S, Markov K, Nakaiwa H, Kikui GI, Kawai H, Jitsuhiro T, Zhang JS, Yamamoto H, Sumita E, Yamamoto S. The ATR multilingual speech-to-speech translation system. IEEE Transactions on Audio, Speech, and Language Processing. 2006 Feb 21;14(2):365-76.
   [2] Weiss, R.J., Chorowski, J., Jaitly, N., Wu, Y. and Chen, Z., 2017. Sequence-to-sequence models can directly translate foreign speech. arXiv preprint arXiv:1703.08581.

[3] Federico, M., Enyedi, R., Barra-Chicote, R., Giri, R., Isik, U., Krishnaswamy, A. and Sawaf, H., 2020. From speech-to-speech translation to automatic dubbing. arXiv preprint arXiv:2001.06785.

6. Alignment to School specific priorities (SoE: State specifically how the proposal supports the Flagship Projects and expected impacts at Cluster and School levels) #

Man-Machine interface, modeling and simulation - social technology which will help learners overcome their language handicap

7. Methodology#

Firstly, our project is broken down into 3 parts:
- Speech-to- Text
- Text-to-Text
- Text-to-Speech

We first transcribe the speech of the audio file into the text file using various cloud platforms (Google cloud, Amazon AWS or Microsoft Azure). Then we will translate that text file into the text file of other language through translation APIs. Then, we will screen read the text of other language in an audio or video file. Also, through this we can also compare different cloud services that which one is more accurate and faster. Hence, preferable for speech-to- text, text-to-text, and text-to-speech for different cloud service providers.

4. Gantt chart of the activities#

Sl. No.	Activity	June-Aug 2022	Sept-Nov 2022	Dec-Feb 2022-23	March-April 2023	Personnel
1	Speech-to-Text					BR, JvS
2	Text-to-Text					BR, JvS
3	Text-to-Speech					BR, JvS
4	Front-End					BR, JvS
5	Back-End					BR, JvS

BR – Bipul Raj, JvS – Jayendra Vardhan Singh

8. Budget with justification:

Proposed expenditure	Quantity	Value	**Total**
Consumables - Cloud Services	12 months	30,000	30,000
Equipment	-	-	-
Characterization	-	-	-
Any other (please specify) – conference registration and travel		30,000	30,000
Total Budget			60,000

Justification item wise:

Cloud Services to evaluate the different available APIs as well as hosting the web application developed to enable automatic dubbing.,

We aim to publish a conference article in a reputed Scopus Indexed conference benchmarking the right choice

of APIs in the case of Indian languages

Note: 1) Please attach one-page CVs of Mentors.
2) If required, annexures may be used for items 2-8.