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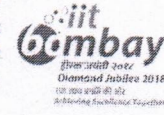


संगणक विज्ञान एवं अभियांत्रिकी विभाग
भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई-400 076, भारत



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APPOINTMENT OF MANAGEMENT CONSULTANT

To
Dr. Shweta A Bansal
Associate Professor
K R Mangalam University

Dear **Dr. Shweta A Bansal**

We would like to invite you to be part of our project UDAAN IITB (<https://udaanproject.org/>) as **Management Consultant**, on a pro bono basis. Your precious academic expertise, managerial advice and suggestions will help us to make UDAAN better in many ways.

The major goal of UDAAN is to translate and publish books in native languages for engineering, medical and text-books from other curricula and make it accessible in a cost effective manner. To achieve this noble objective, textbooks have to be made available in Hindi and other major Indian languages. Since we do not have authors who can produce the required text-books in various Indian languages, the only choice before us is to translate the text-books from English. This has to be done on an industrial scale to achieve the dream. This process will help create an active ecosystem of translation post-editors and reviewers or proof readers around the platform.

By using UDAAN to translate and publish books in the main Indian languages, we seek your sincere assistance in statistical assessment and managerial consultancy in achieving translation work at scale. We will also leverage the ongoing tool development and research we are already doing.

If you encounter any problems or questions regarding the details of our UDAAN project, you are always welcome to contact us. We will be waiting for your kind gesture.

For your reference, a detailed journey and information of Udaan is given below:

Seven years back, through some meager funding, we undertook a project to develop a Translation Engine to translate technical books. Back then deep learning was not very mature and over the course of time, machine learning matured and Project Udaan fructified. We have also worked closely through these years with linguistic experts for the development of digital technical dictionaries. Besides, we also invoke state-of-the-art Machine Learning and Artificial Intelligence based Translation Engine and an End-To-End eco-system to translate technical books from English to Hindi and other Indian languages.

On September 14, which is celebrated as Hindi Divas every year, the Department of Computer Science and Engineering (CSE), IIT Bombay, with the formal launch of 'Project Udaan': <https://www.udaanproject.org/> The launch took place during an event held at the Institute, which saw Dr. Krishnaswamy Vijayaraghavan, the then Principal Scientific Adviser to the Government of India grace the occasion as the chief guest (video:

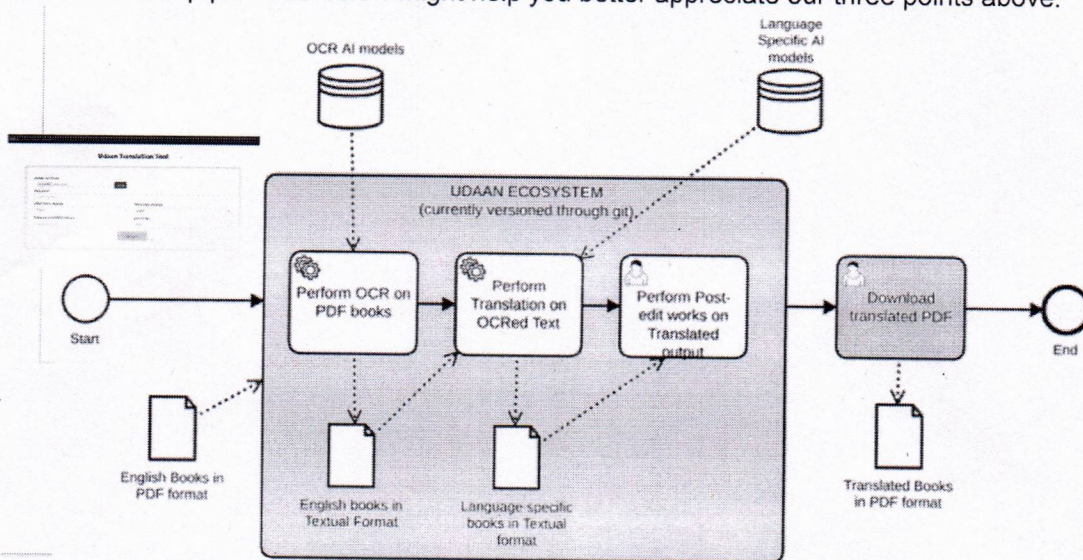

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<https://www.youtube.com/watch?v=R9fLAqkUGH8>, press coverage: <https://bit.ly/udaan-press>).

While, I must emphasize that much more work needs to be done and is being pursued relentlessly at CSE-IIT- Bombay, fortunately, now our **Translation Engine** has achieved a level of competence, where we are now able to translate Engineering books in 1/6th the time it would take for a team of Linguists and domain specialists otherwise.

We would like to draw your attention to the fact that we have relied on The Commission for Scientific and Technical Terminology (CSTT) for technical terms in Hindi. This has enabled us to ensure standardisation and acceptability of our translation.

The brief writeup provided below might help you better appreciate our three points above.



As depicted in the flow above, 'Project Udaan,' is an end-to-end ecosystem, which translates scientific and technical content from English to Hindi and all other Indian languages. We built an AI (Artificial Intelligence)-based translation ecosystem, which can help translate engineering textbooks and learning materials in one-sixth the time it would take for a team consisting of domain and linguistic experts working manually. In due course, text books in all domains can be taken up.

Project Udaan, has leveraged our own advances in human-in-the-loop deep learning (decile.org), Optical character recognition to help scale up the end-to-end process of translating and post-editing (toward publication quality output) technical documents in English into several Indian languages and thereby restore knowledge parity to Indian Languages. China, Japan and South Korea, to mention a few Asian economic success stories, have been able to achieve inclusive growth only by making Science and Technology available in their own languages. Our journey with UDAAN began 7 years ago as an open-source post-editing tool that can reduce manual editing efforts to quickly produce publishable-standard documents in different languages. UDAAN has an end-to-end Machine Translation (MT) plus post-editing pipeline wherein users can upload a document to obtain raw MT output. Further, users can edit the raw translations using our tool. UDAAN offers several advantages: (i) Domain-aware, vocabulary-based lexical constrained MT. (ii) source-target and target-target lexicon suggestions for users. Replacements are based on the source and target texts' lexicon alignment. (iii) Suggestions for translations are based on logs created during user interaction. (iv) Source-target sentence alignment visualization that reduces the cognitive load of users during editing. (v) Translated outputs from our tool are available in multiple formats: docs, latex, and PDF.

Our tool itself is independent of the source and target languages. As mentioned earlier,

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experimental results based on the usage of the tools and users' feedback show that our tool speeds up the translation time atleast by a factor of six compared to the baseline method of translating documents from scratch. Our tool is available for both Windows and Linux platforms and the service is hosted here: <https://pepmiitb.jio.com/udaan> (along with tutorials and instructions). The tool is open-sourced and the source-code is available at <https://github.com/ayushbits/udaan-post-editing>. Demonstration and tutorial videos for various features of our tool can be found here

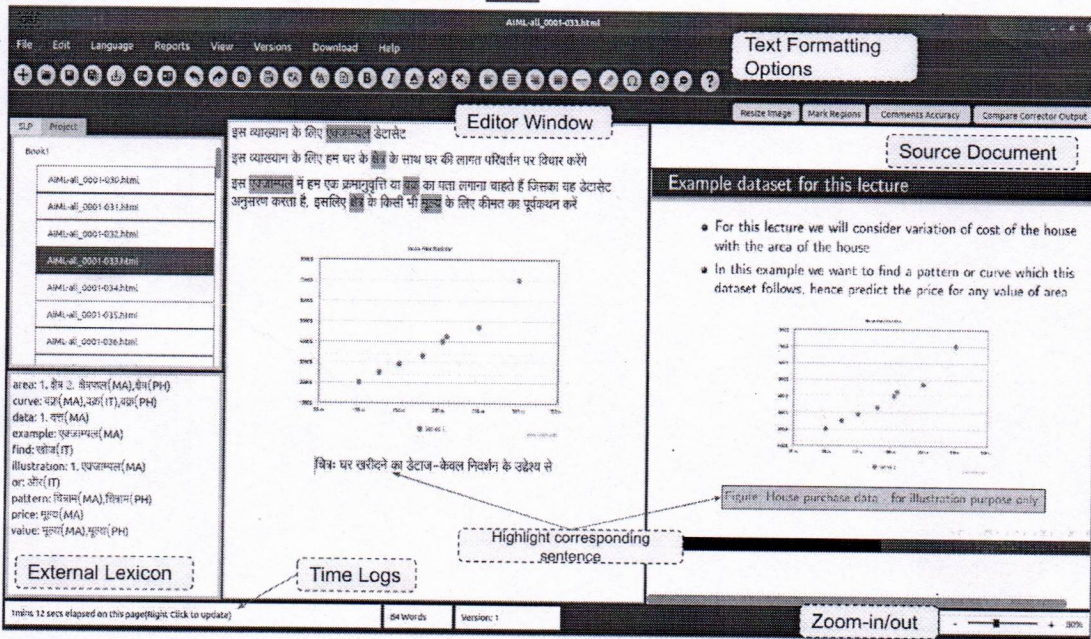
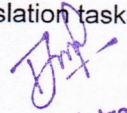


Figure: Screenshot of the UDAAN tool and eco-system with highlights about its key features

Going forward, project Udaan has set for itself the following goals based on specific followup projects from the Govt of India and certain publishers:

- Development of conversational Sanskrit translator using Neural Machine Translation leveraging <https://www.udaanproject.org/>
 - Proposal accepted under the highly competitive Indian Knowledge Systems Division <https://iksindia.org/>
 - Goal: Extend the backend Machine Translation to Sanskrit
- An Interpretable Unified Framework for Text-to-Text Translation among Indian Languages using Sanskrit-based Interlingua Representation
 - Proposal (as part of a consortium) accepted under the highly competitive <https://www.meity.gov.in/national-language-translation-mission>.
 - Goal: Smart and High Quality Neural Machine Translation from English into multiple Indian languages in one shot using Sanskrit based interlingua
 - The project aims at developing a linguistically faithful and interpretable translation system for the translation of text among multiple Indian languages. The project proposes to use an interlingua framework rooted on the traditional grammatical system of Sanskrit
- Improving the OCR and Post-editing tool for diverse input layouts
 - Proposal (as part of a consortium) accepted under the highly competitive <https://www.meity.gov.in/national-language-translation-mission>.
 - Improvement in Assistive-AI leveraging user feedback, on-the-fly fine-tuning of Translation Models based on user feedback,
 - Pro-active use of Translation Memory for improved translation. Grammarly for Indian Languages, Smart color codes to identify potential errors,
 - AI-based Project management system, Smart distribution of translation tasks,


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Automatic evaluation of text-correctors and proofreaders, Assisting users for continuous learning and improvement

- Machine Learning-based End-to-End Translation and Post-Editing Ecosystem for Documents in the Banking Domain by leveraging <https://www.udaanproject.org/>
 - Specifically for the Govt's Rajbhasha dept handing banking documents with Bank of Baroda being pilot partner

Hence, last but not least, we are eagerly waiting for your response.

Thanks and Regards,



Ganesh Ramakrishnan
Institute Chair Professor, Dept of CSE
<https://www.cse.iitb.ac.in/~ganesh/>
Professor-in-Charge, Koita Centre for Digital Health,
<https://www.kcdh.iitb.ac.in/>

PS: Press Articles Covering Udaan Project (see <https://bit.ly/udaan-press>)

Video links

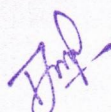
- <https://www.youtube.com/watch?v=R9fLAgkUGH8> - Launch at IIT Bombay
- Slides:
https://docs.google.com/presentation/d/1iyv1RA9lCmdktY_yfq0H1sPPUAe6wxZfpstNSWcwmiE/edit#slide=id.gcf649431ea_0_39
- <https://www.youtube.com/watch?v=vroRNncHJw8> - Discussion of Project Udaan

Social Media

- <https://www.facebook.com/301908303167310/posts/4660279803996783/>
- <https://twitter.com/iitbombay/status/1437710781890453516?s=20>
- https://www.linkedin.com/posts/indian-institute-of-technology-bombay_iitbombay-iitb-projectudaan-activity-6843477280145125376-mdm0
- IIT Bombay's official release:
<https://www.iitb.ac.in/en/breaking-news/iit-bombay-professor-and-his-team-launch-%E2%80%98project-udaan%E2%80%99-ai-based-translation-software>

Print Media

- <https://pib.gov.in/PressReleasePage.aspx?PRID=1754787>
- <https://analyticsindiamag.com/iit-bombay-launches-project-udaan-ai-based-translation-for-non-english-speakers/>
- <https://ianslife.in/culture/project-translate-engineering-books-hindi-vernacular-languages>
- https://m.timesofindia.com/home/education/news/a-project-to-translate-engineering-books-into-hindi-vernacular-languages/amp_articleshow/86199294.cms
- <https://www.deccanherald.com/national/west/iit-bombay-launches-ai-based-translation-project-udaan-1030309.html>
- <https://www.orissapost.com/a-project-to-translate-engineering-books-into-hindi-vernacular-languages/>
- <https://newsonair.com/2021/09/15/iit-bombay-launches-project-udaan-a-language-translator/>
- <https://www.gkseries.com/blog/the-ai-based-language-translator-software-project-udaan-has-been-launched-by-which-of-the-following-indian-institute/>
- <https://currentaffairs.bankexamstoday.com/2021/09/project-udaan-iit-bombay.html>
- <https://www.abpeducation.com/news/iit-bombay-launch-project-udaan-an-ai-based-translation-software-ecosystem/cid/1211014>
- <https://currentaffairs.adda247.com/iit-bombay-rolls-out-language-translator-project-ud>


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- <https://www.gktoday.in/current-affairs/iit-bombay-launches-project-udaan/>
 - <https://www.shiksha.com/engineering/articles/iit-bombay-launches-project-to-translate-books-into-hindi-blogId-68883>
 - <https://www.daijiworld.com/news/newsDisplay?newsID=873360>
 - <https://www.sify.com/news/a-project-to-translate-engineering-books-into-hindi-vernacular-languages-news-national-vjomktgahhaci.html>
 - <https://flipboard.com/topic/translation/iit-bombay-launches-project-udaan-ai-based-translation-for-non-english-speakers/a-CJ20yE22Q3SSZMzZxgbCRA%3Aa%3A2644345253-8c16ef944d%2Fanalyticsindiamag.com>
 - <https://poketnews.com/index.php/pr/detail/iit-bombay-launches-project-udaan>
 - <https://www.byscoop.com/iit-bombay-rolls-out-language-translator-project-udaan/>
 - https://www.socialnews.xyz/2021/09/14/a-project-to-translate-engineering-books-into-hindi-vernacular-languages/?utm_source=rss&utm_medium=rss&utm_campaign=a-project-to-translate-engineering-books-into-hindi-vernacular-languages
 - <https://www.mid-day.com/mumbai/mumbai-news/article/engineering-texts-may-soon-be-in-hindi-other-languages-too-23192359>
 - <https://www.hindustantimes.com/cities/mumbai-news/iit-bombay-designs-ai-based-translation-app-to-help-students-from-linguistic-minorities-101631632296794.html>
 - <https://www.punekarnews.in/project-udaan-an-ai-based-translation-software-ecosystem-iit-bombay-professor-and-his-team-launch-project-on-hindi-divas/>
 - <https://timesofindia.indiatimes.com/india/artificial-intelligence-breaks-language-barrier-for-tech-edu/articleshow/86218960.cms>
 - <https://restofworld.org/2022/indian-universities-are-ditching-english-only-education/>
 - Marathi news:
<https://www.mymahanagar.com/tech-gadgets/ai-based-project-udaan-launched-by-iit-bombay-professor-on-hindi-divas/339734/>
 - <https://timesofindia.indiatimes.com/india/artificial-intelligence-breaks-language-barrier-for-tech-edu/articleshow/86218960.cms>


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Training No.	Date	Name of Entity	Description	Consultancy Amount	Project and Training Coach	Department	Fixed Exp.	Exp. %	Profit	Faculty Share @ 60%	University Share @ 40%	TDS	NET PAYMENT
1	10-12-2021	ENERGOES	Best Practice Guidelines for Starting, Hiring and Training the Security Consultant	3,00,000	Dr. Anshika Prakash, Associate Professor	SOMC	2,11,516	70.51%	88,484	53,090	35,394	5,309	47,781
2	10-12-2021	ENERGOES	Socio-economic security for informal workers in unorganised sector in india	2,00,000	Dr. Kshama Sharma, Assistant Professor	SOMC	1,54,080	77.04%	45,920	27,552	18,368	2,755	24,797
3	13-12-2021	ENERGOES	Financial Literacy Consultancy Project	2,50,000	Dr. Rashmi Singal, Associate Professor	SOMC	1,69,772	67.91%	80,228	48,137	32,091	4,814	43,323
4	13-12-2021	ENERGOES	Training Programme on Stress Management	2,50,000	Dr. Richa Nangia, Associate Professor	SOMC	1,57,503	63.00%	92,497	55,498	36,999	5,550	49,948
5	20-12-2021	KENT	Modification of Ceiling/ Table Fan	7,50,000		SOMC	6,18,680	82.49%	1,31,320	78,792	52,528	7,879	70,913
6	21-12-2021	KALIA	Smart furniture designs and details including 3d renderings, elevation and side views	8,00,000		SOMC	6,67,613	83.45%	1,32,387	79,432	52,955		
7	02.02.2023	Clintus Network Limited	Best Practice Guidelines for Starting, Hiring and Training	2,50,000	Dr. Monika Yadav	SOMC	1,69,937	67.97%	80,063	48,038	32,025	7,943	71,489
8	07.02.2023	Skyways Air Services Pvt. Ltd.	Behaviour & Soft Skills - Training	2,00,000	Dr. Kshama Sharma	SOMC	1,52,576	76.29%	47,424	28,454	18,970	4,804	43,234
9	09.02.2023	Brace Port Logistics Pvt. Ltd.	Leadership Skills	2,40,000	Ms. Shreya Sharma	SOMC	1,68,093	70.04%	71,907	43,144	28,763	2,845	25,609
10	10.02.2023	Clintus Network Limited	Behavior Training	2,25,000	Dr. Swati Srivastava	SOMC	1,44,207	64.09%	80,793	48,476	32,317	4,848	43,628
11	13.02.2023	Skyways Air Services Pvt. Ltd.	Emerging Logistic Trends & Logistics Solutions	3,00,000	Dr. Nirmaljeet Kaur	SOMC	1,84,393	61.46%	1,15,607	69,364	46,243	6,936	62,428
12	16.02.2023	Clintus Network Limited	Sales Training - Grow Your Business	3,00,000	Dr. Ritu Jain	SOMC	1,83,435	61.15%	1,16,565	69,939	46,626	6,994	62,945
13	17.02.2023	Brace Port Logistics Pvt. Ltd.	Strengthening communication and improving maintaining relationships	2,60,000	Ms. Rashmi Singel	SOMC	1,74,583	67.15%	85,417	51,250	34,167	5,125	46,125
14	20.02.2023	Skyways Air Services Pvt. Ltd.	Sales Training - How to grow your business	2,75,000	Dr. Shivani Kampani	SOMC	1,75,783	63.92%	99,217	59,530	39,687	5,953	53,577
15	22.02.2023	Clintus Network Limited	Service Training - Logistic and Packer & Mover Solutions	2,75,000	Dr. Kshama Sharma	SOMC	1,66,735	60.63%	1,08,265	64,959	43,306	6,496	58,463
16	24.02.2023	Skyways Air Services Pvt. Ltd.	Work Life Balance & Stress Management	2,25,000	Dr. Ruchika Yadav	SOMC	1,52,576	67.81%	72,424	43,454	28,970	4,345	39,109
17	01.03.2023	R K Enterprises	Training of Integration of Effective tools for Assessment	2,50,000	Ms. Kanchan Khatrija	SOED	1,77,818	71.13%	72,182	43,309	28,873	4,331	38,978
18	01.03.2023	R K Enterprises	Development of e-content as per Four Quadrant Approach on Interactive Board for digital platforms	2,50,000	Ms. Vidhi Gaur	SOED	1,77,818	71.13%	72,182	43,309	28,873	4,331	38,978
19	02.03.2023	R K Enterprises	Training on Active learning and simulations in Science Education with ICT tools	2,50,000	Dr. Binti Dua	SOED	1,77,818	71.13%	72,182	43,309	28,873	4,331	38,978
20	02.03.2023	R K Enterprises	Training on Constructing Digital Lesson Plan using ICT Tools	2,50,000	Dr. Shabia Subuhi	SOED	1,77,818	71.13%	72,182	43,309	28,873	4,331	38,978
				61,00,000			43,62,754		17,37,246	10,42,345	6,94,901	1,04,234	9,38,111

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