Tushar Dhyani

NLP · DATA SCIENCE · DEEP LEARNING · COMPUTER SCIENCE

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Professional Experience

Sony   *Stuttgart, BW, Deutschland*
WERKSTUDENT - AI, SOUND AND SPEECH RESEARCH LAB   *Nov. 2021 - Present (16 Months)*
- Responsible for Source Separation Framework and implementation of new researches into the framework.
- Responsible for an internal framework for Audio and speech augmentation.

Hessian.ai   *Darmstadt, Hesse, Deutschland*
WERKSTUDENT   *August. 2021 - Oct 2021 (3 Months)*
- Designed *topic modeling* framework for European Federal Election 2021.
- Integration and deployment of other modules and resources into the main backend.

Genietalk   *Mumbai, Maharashtra, India*
JUNIOR DATA SCIENTIST   *March. 2019 - March. 2021 (2 Years)*
- Our team created a Conversational SaaS platform, which helped in raising $750,000 in series A funding.
- Completely responsible for conversational turn-taking agent.
- Adaptation and integration of the conversational agent for a few low-resource Indian languages.

DATA SCIENCE INTERN   *July. 2018 - Oct. 2018 (3 months)*
- Implementation of *Microsoft R-net* & *BiDirectional Attention Flow* for domain specific machine comprehension.
- Built a language identification tool for identifying English and English-typed language used in text-based conversations.

Education

Universität Stuttgart   *Stuttgart, BW, Deutschland*
MASTER OF SCIENCE IN COMPUTATIONAL LINGUISTICS   *Apr. 2021 - Ongoing*
- **Coursework:** *Core Linguistics* - Advance Machine Learning, Emotion Analysis, Parsing, Machine Translation, Machine Learning, Ethics in NLP.

Madhav Institute of Technology & Science   *Gwalior, Madhya Pradesh, India*
B.E. IN INFORMATION TECHNOLOGY (7.6/10 WITH *Hons.*)   *June. 2014 - June. 2018*

Projects

Diffusion Denoising of speech   *Stuttgart, Germany*
CREATED DENOISING FRAMEWORK USING DIFFUSION MODELS FOR SPEECH.   *July 2022 - Present*
- Research on noise removal from speech signals from the Frequency-time domain using the diffusion-based generative network. Project supervised by Ph.D. candidate Florian Lux. [Report], [Poster], [Code]

Emotion Stimuli   *Stuttgart, Germany*
EMOTION ROLE LABELING MADE EASY WITH HMM AND TRANSFORMERS.   *July 2021*
- Detailed project on capturing fine-tuned emotions from a piece of text. Under the guidance of Prof. Roman Klinger. Click to view [Report], [Code]

Audiomentation   *Stuttgart, Germany*
AUDIO AUGMENTATION LIBRARY.   *-*
- Contributions of open-source audio augmentation library. View [Code]

Evincing disparity in ethical evaluation of Generative agents   *Stuttgart, Germany*
EVALUATION OF NATURAL LANGUAGE GENERATIVE CONVERSATIONAL AGENT   *July 2021-Sept 2021*
- Reported a study on evaluation of generative models based on checklist mechanism. Click to view [Report]

Bengali Grapheme detection   *Mumbai, Maharashtra, India*
Alpha-syllabary language grapheme detection   *Jan 2020-Mar 2020*
- Handwritten Bengali grapheme detection and separation of constituents of images into: grapheme root, vowel diacritics, and consonant diacritics.

Skills

Frameworks:	PyTorch Tensorflow HuggingFace Scikit-learn Pandas Numpy Matplotlib NLTK Spacy
Tools:	Docker Kubernetes Elasticsearch MySql MongoDB DVC Git GitHub-Actions CI Flask

Publications

Handling Contextualized English For Conversational Agents   *ICMISC 2020 conference*
CREATING LANGUAGE HANDLING FOR CONVERSATIONAL AGENTS   *Mar. 2020*
- You can read the paper here: `https://www.researchgate.net/publication/337012846_HANDLING_CONTEXTUALIZED_ENGLISH_TYPED_REGIONAL_LANGUAGES_FOR_CONVERSATIONAL_AGENTS_TECHNICAL_REPORT`

Forecasting Tuberculosis Morbidity Rate   *ICICSS'2018 conference*
T.B MORBIDITY ANALYSIS USING A DEEP LEARNING ALGORITHMS   *Sept. 2018*
- Presented a paper on Tuberculosis morbidity with time analysis paper in International Conference on Intelligent Computing and Sustainable System conference held under IEEE chapter.
- You can read the paper here: `https://www.researchgate.net/publication/327776140_Using_Deep_Learning_for_Forecasting_Tuberculosis_Morbidity_Rate`

Achievements

Mar-2020	**Kaggle-Bengali.ai Grapheme detection**, Secured 55th rank (top 2%) and Silver medal on Kaggle	*India*
Oct-2019	**Kaggle Expert**, Expert in 2 categories - Discussion and Kernel.	*India*
Mar-2017	**Google CodeJAM-Qualification round, Facebook-Hackercup Qualifier**,	*Gwalior*
Dec-2015	**ACM ICPC-Kharagpur Regionals**, Member of team *CPP Killers* which ranked 42 (out of 76).	*IIT-Kharagpur*