

Tushar Dhyani

NLP • DATA SCIENCE • DEEP LEARNING • COMPUTER SCIENCE

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Professional Experience

Sony

Stuttgart, BW, Deutschland

WERKSTUDENT - AI, SOUND AND SPEECH GROUP

Nov. 2021 - Present (10 Months)

- Redesigned sound processing system with PyTorch for GPU based audio augmentation for source separation.
- De-binarianization mechanism for morphological parser framework for model explainability.
- Developed lip-movement detection system for audiovisual zooming.

Hessian.ai

Darmstadt, Hesse, Deutschland

WERKSTUDENT

August. 2021 - Oct 2021 (3 Months)

- Developed backend for *argos-panoptes.de* for bundestagwahl 2021 with *Elastic Search* and *Docker*.
- Implemented fine-grained analysis techniques coupled with argument extraction for generating election insights on daily articles and party-programs.

Genietalk

Mumbai, Maharashtra, India

JUNIOR DATA SCIENTIST

March. 2019 - March. 2021 (2 Years)

- In a team of 3 Data scientists, created a Conversational SaaS platform, which helped in raising \$750,000 in series A funding.
- Worked on MultiLingual conversational agents, code-mixing, Generative conversational agents and Speech to Text.

DATA SCIENCE INTERN

July. 2018 - Oct. 2018 (3 months)

- Research on *Microsoft R-net* & *BiDirectional Attention Flow* for machine comprehension.
- Built a language identification tool for identifying English and English-typed language used in text based conversations.

Projects

Diffusion Denoising of speech

Stuttgart, Germany

CREATED DENOISING FRAMEWORK USING DIFFUSION MODELS FOR AUDIO.

July 2022 - present

- Working on noise removal framework from speech signals using Diffusion models.

Audiomentation

Stuttgart, Germany

AUDIO AUGMENTATION FRAMEWORK.

- Working on noise removal framework from speech signals using Diffusion models.

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. [Link](#)

Education

Universität Stuttgart

Stuttgart, BW, Deutschland

MASTER OF SCIENCE IN COMPUTATIONAL LINGUISTICS

Apr. 2021 - Ongoing

- **Coursework:** *Core Linguistics* - Emotion role labelling, 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

- **Coursework:** Data Structures & Algorithms, Operating systems, Bash programming, Software Engineering, Object oriented programming, Statistics & Discrete mathematics, Information Theory, Database Management System, Data warehousing & Data Mining, Artificial Intelligence & Expert systems, Neural Networks & fuzzy logic, etc.

Publications

Action based QA for Conversational Agents

FRAMEWORK MODIFICATION FOR CONVERSATIONAL DIALOGUE FLOW

- You can read the paper here: https://www.researchgate.net/publication/337682017_ACTION_BASED_QA_FOR_CONVERSATIONAL_AGENTS

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

Skills

Technology:

Data Science Python NLP

Frameworks:

PyTorch Tensorflow Keras Scikit-learn HuggingFace Pandas Numpy Matplotlib NLTK Spacy

Tools:

DVC Git GitLab CI Github-Action Flask MySQL MongoDB Elasticsearch Docker Kubernetes

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