

TANMAY PAREKH

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EDUCATION

Carnegie Mellon University (SCS)

Master of Science in Language Technologies

2019-2021

3.94/4.0

Indian Institute of Technology Bombay

B. Tech with Honors in Computer Science & Engineering

2014-2018

9.37/10

RESEARCH PROJECTS

ALEXA PRIZE SOCIALBOT PROJECT

- Reached semi-finals of this competition wherein we aimed at building a social chatbot to interact in an open-domain setting

TAG AND GENERATE APPROACH FOR POLITENESS TRANSFER

- Introduced the task of politeness transfer and discussed the peculiarities involved in the task
- Proposed a tag and generate approach beating the state-of-the-art techniques in automatic and human evaluation.

ENTRAINMENT IN CODE-SWITCHED DIALOGUES

- Developing an interactive chatting framework to study entrainment of code-switching in goal-oriented dialogues

LANGUAGE MODELLING FOR CODE-SWITCHED TEXT (Bachelor Thesis)

- Built Dual Language Models (DLM) training two complementary n-gram LMs and combining them in a probabilistic manner
- Designed a new DNN architecture comprising of a dual LSTM unit combining two monolingual LSTM units and out-performed the standard RNNLM baseline

KNOWLEDGE BASED DEFECT EXTRACTION FROM PRODUCT REVIEWS

- Built a knowledge graph for defect-phrases from online product reviews using simple semantic-based pattern matching techniques for extraction

PUBLICATIONS

- A Madaan*, A Setlur*, **T Parekh***, B Póczos, G Neubig, Y Yang, R Salakhutdinov, A Black, S Prabhume, "Politeness Transfer: A Tag and Generate Approach", in Proceedings of ACL 2020
- S Garg*, **T Parekh*** and P Jyothi, "Code-switched Language Models Using Dual RNNs and Same-Source Pretraining", in Proceedings of EMNLP 2018
- S Garg, **T Parekh** and P Jyothi, "Dual Language Models for Code Mixed Speech Recognition", in Proceedings of Interspeech 2018
- T Parekh**, S Farfade and N Rasiwasia, "Automatic and Accurate Attribute Extraction for E-Commerce", in Proceedings of Amazon Machine Learning Conference (AMLC) 2019

SKILLS

Programming: C++, Python, Bash, R, MATLAB, Java

Frameworks: Tensorflow, Pytorch, Pandas

ACHIEVEMENTS & ROLES

- Received **ISCA Student Grant** at Interspeech '18
- Received **Letter of Appreciation** from Education Minister for exemplary performance in Grade 12
- Teaching Assistant** for a total of 5 undergraduate and graduate courses
- Selected in the **Academic Mentorship** programme
- Part of the **Data Journalism** team at IIT Bombay

INDUSTRY EXPERIENCE

APPLIED SCIENTIST

Jul '18 – Jun '19

Amazon (Machine Learning Team)

- Worked on the problem of product attribute extraction from the product page titles without using human supervised data. Modeled it as a NER task
- Proposed use of semi-supervised learning and regularization techniques to learn from partially labeled data

SUMMER ANALYST

May '17 – Jul '17

Goldman Sachs

- Developed a model to predict market trends using the Quote Imbalance of the order book. Outperformed the existing Asia model at the firm and improved the accuracy by more than 10%
- Received a Pre-Placement Offer for my exemplary work

RESEARCH INTERN

May '16 – Jul '17

Philips Innovation Center

- Worked on building an interactive chat-bot for use in medical-oriented applications
- Developed an interactive framework for automated 3D avatar generation for communication and content authoring. Built a framework to record dialogues for dynamic scene generation

ACADEMIC PROJECTS

DEEP LEARNING FOR FOOTPRINT RETRIEVAL

Explored using Siamese networks and new data synthesis techniques for footprint retrieval from crime scenes in the presence of data scarcity and noise

DEEP Q-LEARNING BOMBERMAN AGENT

Studied effect of human-based features and curriculum learning on convergence of deep neural network based Q-learning

MULTIMODAL SENTIMENT ANALYSIS

Explored the combination of speech and text to build ensemble sentiment analysis models

MALICIOUS URL DETECTOR

Trained classification models using feature selection on lexical and host URL features

READER'S SPACE

Built a webapp framework for an online social platform for readers with a PageRank based algorithm for book suggestions