Rocktim Jyoti Das

Mohamed bin Zayed University of Artificial Intelligence,
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EDUCATION

Indian Institute of Technology Delhi *2018 - 2022*
B.Tech in Electrical Engineering with Minor in Computer Science and Engineering
GPA: 8.552/10

PUBLICATIONS

1. **Beyond Size: How Gradients Shape Pruning Decisions in Large Language Models**
   Rocktim Jyoti Das, Liqun Ma, Zhiqiang Shen.
   under review in ICLR, 2024.

2. **Exploring Distributional Shifts in Large Language Models for Code Analysis**
   Shushan Arakelyan, **Rocktim Jyoti Das**, Yi Mao, Xiang Ren.
   Accepted in EMNLP, 2023.

3. **DKAF: KB Arbitration for Learning Task-Oriented Dialog Systems with Dialog-KB Inconsistencies**
   Vishal Saley, **Rocktim Jyoti Das**, Dinesh Raghu, Mausam.
   Accepted in ACL Findings, 2023.

4. **Synergizing In-context and Supervised Learning for End-to-end Task-oriented Dialog Systems**
   Vishal Saley, **Rocktim Jyoti Das**, Dinesh Raghu, Mausam.
   under review in ARR Oct Cycle.

5. **Exams2: Exploring the Multimodal and Multilingual Capabilities of Language Models**
   Rocktim Jyoti Das, Simeon Hristov, Haonan Li, Preslav Nakov.
   under preparation.

Thesis

* - equal contribution

1. **Efficient Framework for Feature-Aware Graph Coarsening via Hashing** .
   Rocktim Jyoti Das*, Aditi Khandelwal* and Sandeep Kumar.
   Undergraduate Thesis, Electrical Engineering, IIT Delhi, 2021 - 22.
   *(Received **Rajiv Bambawale Cash Prize Award, 2021-22** for best Btech Thesis.)*

WORK EXPERIENCE

Mohamed bin Zayed University of Artificial Intelligence, Abu Dhabi *June, 2023 - present*
Research Assistant
Advisor: Prof. Preslav Nakov and Prof. Zhiqiang Shen
Working on developing LLMs for low-resource languages, understanding the capabilities and limitations of LLMs, and developing model compression techniques for LLMs.

Data Analytics and Intelligence Research Group, IIT Delhi & IBM Research, India *June, 2022 - present*
Project Scientist
Advisor: Prof. Mausam
Working on developing and solving challenges related to Task-Oriented Dialog Systems and Large Language Models.

Intelligence and Knowledge Discovery (INK) Lab, USC & Microsoft Research *Aug, 2022 - June, 2023*
Machine Learning Research Intern (Remote)
Advisor: Prof. Xiang Ren
Studied the distributional shift in Large Language Models with coding capabilites like CodeT5, Codex and ChatGPT.

OTHER RESEARCH PROJECTS

Dialog Dataset for Medical Diagnosis *Dec 2022 - Ongoing*
Advisor: Prof. Mausam, *IIT Delhi, India*

- We identified the issues with the current datasets primarily algorithm-simulated conversations with shorter utterances and conversation length and lacking interpretability.
- We create a dataset by annotating transcripts of simulated doctor-patient conversations between two medical experts with an interpretable Bayesian network upon which the diagnosis is grounded.

Arabic Dialectal Language Model *July 2023 - Ongoing*
Advisor: Prof. Preslav Nakov, *MBZUAI, Abu Dhabi*

- Working on developing the first language model for dialectal Arabic languages.

- We are solving issues related to the unavailability of large-scale Dialectal Arabic data, crawling and cleaning data, and developing robust language tools like Language Identification tools for low-resource Dialectal Arabic.

Teaching & Reviewing Experience

- *Undergraduate Teaching Assistantship:* Electrical Engineering, IIT Delhi
  - Physical Electronics - *Prof. Debanjan Bhowmik* — *Fall 2021*
  - Advanced Machine Learning - *Prof. Sandeep Kumar & Prof. Jaydeva* — *Spring 2022*
  - Natural Language Processing - *Prof. Mausam* — *Fall 2022*
- *Reviewing:* ACL ARR December, 2022

Skills

- **Programming:** C++, MATLAB, Python and LaTeX
- **Framework:** PyTorch, PyTorch Geometric

Selected Coursework

Introduction to Machine Learning, Probability and Stochastic Processes, Convex Optimization, Fundamentals of Language Sciences, Natural Language Processing, Planning and Estimation for Autonomous Systems, Analysis and Design of Algorithm, Discrete Mathematics.

References

- Dr. Mausam, Professor, Computer Science and Engineering Department, IIT, Delhi, Email: mausam@cs.washington.edu.
- Dr. Preslav Nakov, Professor, NLP Department, MBZUAI, Abu Dhabi, Email: Preslav.Nakov@mbzuai.ac.ae.
- Dr. Zhiqiang Shen, Assistant Professor, ML Department, MBZUAI, Abu Dhabi, Email: Zhiqiang.Shen@mbzuai.ac.ae.
- Dr. Xiang Ren, Assistant Professor, Department of Computer Science, USC, LA, California, Email: xiangren@usc.edu.