ZEYNEP AKKALYONCU YILMAZ

Master's student working on deep learning for NLP and IR at the University of Waterloo

WORK EXPERIENCE

present | 2018 — **Research Assistant**
Data Systems Group, University of Waterloo — Waterloo, ON, Canada
- Developing deep learning models to improve document retrieval methods with Prof. Jimmy Lin
- Previously worked on cross-lingual natural language generation for question answering

2017 | 2016 — **Research Intern**
KOVAN Research Lab — Ankara, Turkey
- Built a deep reinforcement learning agent that manipulates stacked objects using TensorFlow
- Wrote Python scripts to generate random scenes to be used as training data in Blender
- Conducted literature review regarding robotic action planning based on verbal commands

2015 — **Software Engineering Intern**
ASELSAN Inc. — Ankara, Turkey
- Developed software prototype to track and plot movement of a mobile device in real time
- Implemented a C++ library that extracts and displays motion information from built-in sensors
- Benchmarked different signal processing techniques in terms of speed and robustness

EDUCATION

present | 2018 — **MMath in Computer Science**
University of Waterloo — Waterloo, ON, Canada
GPA: 4.0 / 4.0
Courses: Software Engineering for Big Data, Theory of Deep Learning, Data Infrastructure, Data-Intensive Distributed Computing

2017 | 2013 — **BS in Computer Engineering**
Middle East Technical University — Ankara, Turkey
GPA: 3.4 / 4.0
Relevant Courses: Introduction to Natural Language Processing, Cloud Computing, Linear Algebra, Data Management and File Structures

SELECTED PROJECTS

2019 — **Birch**
https://github.com/castorini/birch
- Document retrieval system based on sentence modeling with BERT in Python
- Implemented training and retrieval modules that aggregate sentence-level evidence to rank documents
- Built an accompanying Docker image and Colab notebook for reproducibility
- Achieved state-of-the-art performance on standard TREC newswire and social media collections

2018 — **Sparksolrini**
https://github.com/castorini/sparksolrini
- Apache Solr integration with Apache Spark for scalable text analytical applications
- Implemented an efficient distributed framework in Scala to bridge Solr output with Spark RDDs
- Demonstrated the effectiveness of predicate pushdown via Solr in terms of code expressivity and latency through multiple case studies including web graph analysis

2018 — **Tardis**
https://github.com/achyudh/tardis
- Framework for distributed ensembles of seq2seq models with Keras and PySpark
- Implemented a pipeline to train and evaluate ensembles for machine translation using Elephas
- Achieved a ~10% increase in BLEU scores with ensembles on WMT'14 datasets over single learners

2017 — **Smart Shopping List**
http://senior.ceng.metu.edu.tr/2017/thechaincoders
- Cross-platform mobile Xamarin shopping list application written in C#
- Built a RESTful API with Django around a SQLite database running on an Azure Linux VM
- Created a hybrid recommendation system in Python to make tailored product suggestions
- Implemented a virtual shopping assistant using NLTK featuring speech detection and generation

PUBLICATIONS

2019 — Ryan Clancy, Jaejun Lee, *Zeynep Akkalyoncu Yilmaz*, and Jimmy Lin. 2019. Information Retrieval Meets Scalable Text Analytics: Solr Integration with Spark. In 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '19).

CONTACT INFO

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SKILLS

Python	PyTorch
C++	TensorFlow
Scala	Keras
Java	NumPy
C#	scikit-learn
SQL	Git
Spark	Unix
Hadoop	Bash
Docker	Azure

LANGUAGES

English Turkish
French Russian

ACTIVITIES

Turkish National Chess Team Player
TED Symphony Orchestra Violinist
Women in Math Grad Representative
Technovation Mentor
Teaching Assistant
- Computational Linear Algebra
- Principles of Data Management & Use
- Data Structures

REFERENCES

Available upon request