

# 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