

# Furkan Şahinuç

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## WORK EXPERIENCE

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**Research Intern** at [Ubiquitous Knowledge Processing Lab](#) - TU Darmstadt Nov 2022 - Oct 2023

- Studied related work generation in [InterText Group](#).

**Research Engineer** at [ASELSAN Research Center](#) NLP Team June 2019 - Sep 2022

- Studied hate speech detection, misinformation detection in social media.
- Other research topics are interpretability of word embeddings, signal processing tools in NLP, gender bias.

## EDUCATION

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2023 - **Ph.D.**, [Ubiquitous Knowledge Processing Lab](#) - TU Darmstadt, Computer Science.  
**Advisor:** Prof. Dr. Iryna Gurevych

2019 - 2021 **M.Sc.**, Bilkent University, Electrical and Electronics Engineering. (GPA: 3.68/4.00)  
**Advisor:** Asst. Prof. Aykut Koç, Co-advisor: Prof. Haldun Ozaktas  
**Thesis title:** *Disclosing Zipfian Regularities in Semantic Breadth of Words via Multi-modal Gaussian Embeddings.*

2014 - 2019 **B.S.**, Bilkent University, Electrical and Electronics Engineering. (GPA: 3.71/4.00)

2010 - 2014 **High School**, Suleyman Demirel Science High School. (GPA: 96.38/100)

## PUBLICATIONS

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### Journal Articles

Cagri Toraman, Eyup Halit Yilmaz, **Furkan Şahinuç**, and Oguzhan Ozcelik (2023). “Impact of Tokenization on Language Models: An Analysis for Turkish”. In: *ACM Transactions on Asian and Low-Resource Language Information Processing* 22.4. DOI: [10.1145/3578707](https://doi.org/10.1145/3578707).

Cagri Toraman, **Furkan Şahinuç**, Eyup Halit Yilmaz, and Ibrahim Batuhan Akkaya (2022). “Understanding Social Engagements: A Comparative Analysis of User and Text Features in Twitter”. In: *Social Network Analysis and Mining* 12.47. DOI: [10.1007/s13278-022-00872-1](https://doi.org/10.1007/s13278-022-00872-1).

**Furkan Şahinuç** and Aykut Koç (2022). “Fractional Fourier Transform Meets Transformer Encoder”. In: *IEEE Signal Processing Letters* 29, pp. 2258–2262. DOI: [10.1109/LSP.2022.3217975](https://doi.org/10.1109/LSP.2022.3217975).

**Furkan Şahinuç**, Eyup Halit Yilmaz, Cagri Toraman, and Aykut Koç (2022). “The Effect of Gender Bias on Hate Speech Detection”. In: *Signal, Image and Video Processing*. DOI: [10.1007/s11760-022-02368-z](https://doi.org/10.1007/s11760-022-02368-z).

- L. Kerem Şenel, **Furkan Şahinuç**, Veysel Yücesoy, Hinrich Schütze, Tolga Çukur, and Aykut Koç (2022). “Learning Interpretable Word Embeddings via Bidirectional Alignment of Embedding Dimensions with Semantic Concepts”. In: *Information Processing & Management* 59.3, p. 102925. DOI: [10.1016/j.ipm.2022.102925](https://doi.org/10.1016/j.ipm.2022.102925).
- Nurullah Sevim, **Furkan Şahinuç**, and Aykut Koç (2022). “Gender Bias in Legal Corpora and Debiasing It”. In: *Natural Language Engineering* 29.2, pp. 449–482. DOI: [10.1017/S1351324922000122](https://doi.org/10.1017/S1351324922000122).
- Furkan Şahinuç** and Aykut Koç (2021). “Zipfian Regularities in Non-point Word Representations”. In: *Information Processing & Management* 58.3, p. 102493. DOI: [10.1016/j.ipm.2021.102493](https://doi.org/10.1016/j.ipm.2021.102493).
- L. Kerem Şenel, İhsan Utlu, **Furkan Şahinuç**, Haldun M. Ozaktas, and Aykut Koç (2020). “Imparting Interpretability to Word Embeddings while Preserving Semantic Structure”. In: *Natural Language Engineering* 27.6, pp. 721–746. DOI: [10.1017/S1351324920000315](https://doi.org/10.1017/S1351324920000315).

## Conference Proceedings

- Cagri Toraman, **Furkan Şahinuç**, and Eyup Halit Yilmaz (2022a). “BlackLivesMatter2020: An Analysis of Deleted and Suspended Users in Twitter”. In: *14th ACM Web Science Conference 2022*. Association for Computing Machinery, pp. 290–295. DOI: [10.1145/3501247.3531539](https://doi.org/10.1145/3501247.3531539).
- (2022b). “Large-Scale Hate Speech Detection with Cross-Domain Transfer”. In: *Proceedings of the Language Resources and Evaluation Conference*. European Language Resources Association, pp. 2215–2225. URL: <https://aclanthology.org/2022.lrec-1.238>.
- Cagri Toraman, Oguzhan Ozcelik, **Furkan Şahinuç**, and Umitcan Sahin (2022). “ARC-NLP at CheckThat! 2022: Contradiction for Harmful Tweet Detection”. In: *Working Notes of CLEF 2022 - Conference and Labs of the Evaluation Forum*. CLEF’2022. Bologna, Italy. URL: <http://ceur-ws.org/Vol-3180/paper-59.pdf>.
- Oguzhan Ozcelik, Eyup Halit Yilmaz, **Furkan Şahinuç**, and Cagri Toraman (2022). “Slot Filling for Voice Assistants”. In: *2022 30th Signal Processing and Communications Applications Conference (SIU)*, pp. 1–4. DOI: [10.1109/SIU55565.2022.9864737](https://doi.org/10.1109/SIU55565.2022.9864737).
- Furkan Şahinuç** and Cagri Toraman (2021). “Tweet Length Matters: A Comparative Analysis on Topic Detection in Microblogs”. In: *Advances in Information Retrieval*. Cham: Springer International Publishing, pp. 471–478. DOI: [10.1007/978-3-030-72240-1\\_50](https://doi.org/10.1007/978-3-030-72240-1_50).
- Furkan Şahinuç**, Cagri Toraman, and Aykut Koç (2021). “Topic Detection based on Deep Learning Language Model in Turkish Microblogs”. In: *2021 29th Signal Processing and Communications Applications Conference (SIU)*, pp. 1–4. DOI: [10.1109/SIU53274.2021.9477781](https://doi.org/10.1109/SIU53274.2021.9477781).
- Furkan Şahinuç**, Veysel Yücesoy, and Aykut Koç (2020). “Intent Classification and Slot Filling for Turkish Dialogue Systems”. In: *2020 28th Signal Processing and Communications Applications Conference (SIU)*, pp. 1–4. DOI: [10.1109/SIU49456.2020.9302308](https://doi.org/10.1109/SIU49456.2020.9302308).

## Arxiv Preprints

- Cagri Toraman, Oguzhan Ozcelik, **Furkan Şahinuç**, and Fazli Can (2022). *Not Good Times for Lies: Misinformation Detection on the Russia-Ukraine War, COVID-19, and Refugees*. URL: <https://arxiv.org/abs/2210.05401>.

Nurullah Sevim, Ege Ozan Özyedek, **Furkan Şahinuç**, and Aykut Koç (2022). *Fast-FNet: Accelerating Transformer Encoder Models via Efficient Fourier Layers*. URL: <https://arxiv.org/abs/2209.12816>.

## SKILLS

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Languages Turkish (Native), English (TOEFL: 96)  
Coding Python (Experience in PyTorch and Huggingface libraries), C, C++, Java, MATLAB, L<sup>A</sup>T<sub>E</sub>X

## HONORS

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**Ranked 1st** in Turkish Harmful Tweet Detection Competition at 2022 CheckThat! Lab on Fighting the COVID-19 Infodemic and Fake News Detection.

**High Honor List** ( $\times 6$ ), Semester GPA  $> 3.5/4.0$ .

**Honor List** ( $\times 2$ ),  $3.0/4.0 < \text{Semester GPA} < 3.5/4.0$ .

**Full Scholarship**, Bilkent University along with B.S., M.Sc. education.

**Ranked 59th** among 2 million examinees in the nationwide university entrance examinations, Turkey, 2014.

**Top Scoring Student**, Suleyman Demirel Science High School, Afyonkarahisar, Turkey, 2014.