Curriculum Vitae – Momchil Hardalov

Personal Information

Momchil Hardalov

- Sofia, Bulgaria
- momchil.hardalov@gmail.com
- February 18, 2022

- [Google Scholar](https://scholar.google.com)
- mhardalov.github.io
- github.com/mhardalov

Research Interests

Natural Language Processing • Few-Shot Learning with Large Language Models • Semi-Supervised Learning • Multilingual Learning • Stance Detection • Abusive Language Detection • Question Answering • Conversational Agents.

Education

Ph.D Candidate in Natural Language Processing *2017 - 2022 (Expected)*
Focus in conversational agents and question answering systems
Faculty of Mathematics and Informatics
Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

MSc in Computer Science *2014 - 2016*
Information Retrieval and Knowledge Discovery, GPA 6.0/6.0
Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

Bachelor of Computer Science *2010 - 2014*
Computer Systems and Technologies, GPA 5.55/6.0
Technical University-Sofia, Sofia, Bulgaria

Work Experience

Research Scientist Checkstep Research *November 2020 - Present*
≡ Doing research in natural language processing for content moderation and stance detection.
- ☑ Published 5 scientific papers, 3 are accepted to appear in top-tier venues.
- ☑ Collaborating with the dev team towards bringing the developed models to the end clients.
- ☑ Curating machine learning models based on the specifics in the clients' policy definitions.
- ❯ Working on few-shot and multi-domain learning for mono and cross-lingual stance detection.
- ❯ Researching semantic neighborhood models for cross-lingual abusive language detection.

Machine Learning Engineer Receipt Bank (now Dext) *November 2019 - November 2020*
≡ Worked on automatic field information extraction from unstructured payment documents.
- ☑ Improved the extraction coverage and the overall accuracy of key fields (4%–10% depending on the field and the metric).
- ☑ Developed models for new (client requested) fields working closely with the Business team.
- ❯ Researched, prototyped, and brought to production machine learning models.

Machine Learning Engineer AdCash *August 2015 - October 2017*
≡ Developed distributed and scalable product serving ad recommendations.
- ☑ Increased the company's profit by 7% with a new ad serving (exploitation) model.
- ☑ Increased the ad diversity by 12% and the revenue by 5% with a new (exploration) model.
- ❯ Researched, prototyped, and brought to production machine learning models.
- ❯ Designed and executed experiments (A/B tests) for model optimizations.
- ❯ Worked closely with the Business team on new features.

Team Lead Acstre *July 2010 - August 2015*
≡ Designed, developed and maintained desktop and web applications.
Led a small team of developers.
- ☑ Productionized an unified user management and security system integrated into more than 20 company products working in more than 250 organizations.
- ☑ Built an event-based notification system with communication channels as plug-ins.
- ☑ Successfully migrated existing projects' legacy database management system to PostgreSQL.
- ❯ Delivered multiple software projects by leading 3-5 people project teams.
- ❯ Gathered technical specifications for new products/features from clients.

Technology Skills

Programming languages: Python, Java, C/C++, R, SQL.

Frameworks: PyTorch, TensorFlow, Keras, SciPy, Scikit-learn, NLTK, Transformers, Gensim, Apache Spark, Hadoop, CoreNLP.

Other: Redis, ElasticSearch, Kafka, Docker, Lucene.

TEACHING EXPERIENCE	**Teaching Assistant** (Information Retrieval, Data Mining, Text Mining) *October 2015 - Present*

Teaching Assistant (Information Retrieval, Data Mining, Text Mining) *October 2015 - Present*
Faculty of Mathematics and Informatics
Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

HONORS AND AWARDS

$1^{st}/6$	**PAN@CLEF "Author Identification"**	*2018*
1st in class	**Gold medal, Sofia University**	*2016*
$1^{st}/18$	**SemEval "Community Question-Answering"**	*2016*
$2^{nd}/22$	**PAN@CLEF "Author Profiling" (Spanish)**	*2015*
$6^{th}/22$	**PAN@CLEF "Author Profiling" (English)**	*2015*
National	**Young People Encouragement Program, Embassy of Sweden**	*2015*
National	**Winner in category "Students Award", BAIT Awards**	*2014*
Top 15%	**Award for academic excellence, Technical University**	*2014*

LANGUAGES

Bulgarian: Native or bilingual proficiency   **English:** Full working proficiency

German: Elementary proficiency   **Russian:** Elementary proficiency

SERVICE

Program Committee: AAAI '21 '22; ACL '18 '20 '21; ACL Rolling Review (since Nov 2021); COLING '20; EACL '21; EMNLP '19 '20 '21; ICJNN' 19; NAACL-HLT '21; RANLP '21; SIGIR '19 '20; Truth and Trust Online (TTO) '21; WWW '22

Workshops (reviewer): CLEF '21; CoNLL' 19; RANLP SRW '21; SemEval '18

Journals (ad-hoc reviewing): Computer Speech & Language (CSL); IEEE Access; Journal of Data and Information Quality (JDIQ); MDPI (Applied Sci., Info., Comp.); Northern European Journal of Language Technology (NEJLT); Online Social Networks and Media (OSNM)

RECENT PUBLICATIONS

Momchil Hardalov, Arnav Arora, Preslav Nakov, and Isabelle Augenstein. Few-Shot Cross-Lingual Stance Detection with Sentiment-Based Pre-Training. In *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence*, AAAI-22   2022

Kristiyan Vachev, **Momchil Hardalov**, Georgi Karadzhov, Georgi Georgiev, Ivan Koychev, and Preslav Nakov. Leaf: Multiple-Choice Question Generation. In *Proceedings of the 44th European Conference on Information Retrieval (Demonstrations)*, ECIR-2022   2022

Sheikh Muhammad Sarwar, Dimitrina Zlatkova, **Momchil Hardalov**, Yoan Dinkov, Isabelle Augenstein, and Preslav Nakov. A Neighbourhood Framework for Resource-Lean Content Flagging. *Transactions of the Association for Computational Linguistics, TACL*   2021

Momchil Hardalov, Arnav Arora, Preslav Nakov, and Isabelle Augenstein. Cross-Domain Label-Adaptive Stance Detection. In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*, EMNLP '21   2021

Momchil Hardalov, Arnav Arora, Preslav Nakov, and Isabelle Augenstein. A Survey on Stance Detection for Mis- and Disinformation Identification. *arXiv preprint arXiv:2103.00242*   2021

Momchil Hardalov, Todor Mihaylov, Dimitrina Zlatkova, Yoan Dinkov, Ivan Koychev, and Preslav Nakov. EXAMS: A Multi-subject High School Examinations Dataset for Cross-lingual and Multilingual Question Answering. In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing*, EMNLP '20   2020

Momchil Hardalov, Ivan Koychev, and Preslav Nakov. Enriched Pre-trained Transformers for Joint Slot Filling and Intent Detection. *arXiv preprint arXiv:2004.14848*   2020

Momchil Hardalov, Ivan Koychev, and Preslav Nakov. Beyond English-Only Reading Comprehension: Experiments in Zero-shot Multilingual Transfer for Bulgarian. In *Proceedings of the International Conference on Recent Advances in Natural Language Processing*, RANLP '19   2019