Haritz Puerto

ML/NLP PH.D. CANDIDATE

LANGUAGES

Spanish ● ● ● ● ● ●
English ● ● ● ● ● ○
Korean ● ● ● ○ ○ ○
French ● ● ○ ○ ○ ○
German ● ○ ○ ○ ○ ○

ML STACK

- PyTorch
- Hugging Face ecosystem
- Langchain
- vLLM
- Neptune.AI
- Slurm
- Azure

RESEARCH STACK

- Grant writing
- Project management
- Seminar organization
- Public speaking
- Teaching

SOCIAL

haritzpuerto.github.io/

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WORK EXPERIENCE

DOCTORAL RESEARCHER
UKP Lab @ TU Darmstadt   Jun 2021 - Present
- Ph.D. research, grant writing, project management, seminar organization, teaching

DATA SCIENTIST
Coleridge Initiative   Jan 2021 - May 2021
- Co-organized the Kaggle Competition Show US the Data.

RESEARCH ASSISTANT
IR&NLP Lab, KAIST   Sep 2018 - Feb 2021
- Research on question answering, question generation and graph neural networks.

SOFTWARE ENGINEER
Claroflex   Jul 2015 - Jul 2017
- Development of a web-based enterprise resource planning (ERP) using Java EE, Python, and MySQL.

EDUCATION

Ph.D in ML & NLP
TU Darmstadt, Germany   Jun 2021 - Present
- Ph.D. topic: Reasoning and explainability in large language models.

M.Sc. in Computer Science
KAIST, South Korea   Sep 2018 - Mar 2021
- Thesis Topic: A Hierarchical SRL Graph Network for Multi-Hop Question Answering

B.Sc. in Computer Science
University of Malaga, Spain   Sep 2012 - July 2027
- Graduated with Honors.
- Exchange semester at Seoul National University (Fall 2014)

AWARDS

- Honorable Mention Award in NYU Coleridge Initiative's Rich Context Competition (2019).
- Best Paper Award in the Korea Computer Congress (2019).
- Korean Government Scholarship Program (Korean language program and Master's Degree; 2017).
- European Institute of Innovation and Technology (EIT Digital) Master scholarship (Gracefully declined; 2017).
- Graduation with Honors from the Department of Computer Science at the University of Malaga (2017).
- Exchange Semester scholarship to study at Seoul National University (2014).
- Graduated with Honors from High School (2012).

PROJECTS

Athene: Security in LLMs
<div align="right">Jan 2024 - Today</div>

- Grant proposal writing and project manager.
- Research on LLMs vulnerabilities (e.g.: prompt injection, backdoors, and data leaks)
- Funded from 2024 – 2027 by the National Research Center for Applied Cybersecurity ATHENE
- Project web: link

Microsoft: Accelerating Foundation Models Research
<div align="right">Jan 2024 - Today</div>

- Grant manager
- Azure credits to support our research on large language models
- Setup of Azure OpenAI service and contact person for the whole lab
- Publications: (Puerto et. al., 2024)

DFG: Software for Question Answering Research
<div align="right">Jan 2022 - Today</div>

- Project manager since June 2022
- Development of a platform for question-answering research
- Project web: square.ukp-lab.de
- Total amount of users: 1K
- Funded by the German Research Foundation (DFG)
- Publications: (Fang et al., 2023), (Puerto et al., 2023a), (Puerto et al., 2023b), (Sachdeva et al., 2023), (Baumgärtner et al., 2022)

IITP: Exobrain
<div align="right">Dec 2018 - Feb 2021</div>

- Modeling multi-hop question answering using graph neural networks.
- Project funded by the Institute for Information & Communications Technology Planning & Evaluation (IITP) of the Korean Government.
- Project web: exobrain.kr
- Publications: (Kang et al., 2020), (Lim et al., 2020), (Kang et al., 2019), (Puerto et al., 2019)

Rich Context Competition
<div align="right">Oct 2018 - Feb 2029</div>

- Won the honorable mention award in New York University's Coleridge Initiative Rich Context competition.
- The goal is to develop a machine-learning model that identifies the datasets used in scientific publications. I solved the challenge by modeling it as a Question Answering task and presented the project in the competition's workshop at New York University.
- NYU's News Post: Link

LECTURES AND TALKS

Lectures

- QA Lecture in the course NLP4Web @ TU Darmstadt (WS 22/23, WS 23/24) - Instructor: Prof. Iryna Gurevych
- QA Lecture in the course NLP @ Koç University (SS 23) - Instructor: Prof. Gözde Gül Şahin
- Data Analysis Software Project for Natural Language (WS 22/23) @ TU Darmstadt - Co-Instructor with Dr. Yufang Hou
- QA Lecture in the course Deep Learning for NLP (SS 22/23) - Prof. Ivan Habernal.

Invited Talks

- UKP-SQuARE @ Huawei Search Engine Academic Workshop, November 2022
- ScaDS.AI Machine Learning Summer School: QA Research, July 2022
- Hacia Afuera Podcast: Making AI Answer Questions (in Spanish), February 2022

PUBLICATIONS

* indicates equal contribution.

- **Haritz Puerto**, Martin Tutek, Somak Aditya, Xiaodan Zhu, Iryna Gurevych. **Code Prompting Elicits Conditional Reasoning Abilities in Text+Code LLMs.** arXiv preprint 2024.

- Ji-Ung Lee, **Haritz Puerto**, Betty van Aken, Yuki Arase, Jessica Zosa Forde, Leon Derczynski, Andreas Rücklé, Iryna Gurevych, Roy Schwartz, Emma Strubell, Jesse Dodge. **Surveying (Dis)Parities and Concerns of Compute Hungry NLP Research.** arXiv preprint 2023

- Haishuo Fang, Haritz Puerto, Iryna Gurevych. **UKP-SQuARE: An Interactive Tool for Teaching Question Answering.** In BEA Workshop@ACL 2023.

- **Haritz Puerto**, Tim Baumgärtner, Rachneet Sachdeva, Haishuo Fang, Hao Zhang, Sewin Tariverdian, Kexin Wang, Iryna Gurevych. **UKP-SQuARE v3: A Platform for Multi-Agent QA Research.** In ACL 2023 Demo Track.

- **Haritz Puerto,** Gözde Gül Şahin, Iryna Gurevych. **MetaQA: Combining Expert Agents for Multi-Skill Question Answering.** In EACL, 2023.

- Rachneet Sachdeva*, **Haritz Puerto*,** Tim Baumgärtner, Sewin Tariverdian, Hao Zhang, Kexin Wang, Hossain Shaikh Saadi, Leonardo F. R. Ribeiro, Iryna Gurevych. **UKP-SQuARE v2: Explainability and Adversarial Attacks for Trustworthy QA.** In AACL 2022 Demo Track.

- Tim Baumgärtner, Kexin Wang, Rachneet Sachdeva, Max Eichler, Gregor Geigle, Clifton Poth, Hannah Sterz, **Haritz Puerto**, Leonardo F. R. Ribeiro, Jonas Pfeiffer, Nils Reimers, Gözde Gül Şahin, Iryna Gurevych. **UKP-SQUARE: An Online Platform for Question Answering Research.** ACL 2022 Demo Track

- Junmo Kang*, Giwon Hong*, **Haritz Puerto***, Sung-Hyon Myaeng. **Regularization of Distinct Strategies for Unsupervised Question Generation**. In Findings of EMNLP, 2020.

- Doyeon Lim*, **Haritz Puerto***, Sung-Hyon Myaeng. **Analysis of the Semantic Answer Types to Understand the Limitations of MRQA Models**. Journal of KIISE (2020).

- Book chapter Finding Datasets in Publications: **The KAIST Approach in Rich Search and Discovery for Research Datasets**. SAGE 2020.

- Junmo Kang*, **Haritz Puerto***, and Sung-Hyon Myaeng. **Let Me Know What to Ask: Interrogative-Word-Aware Question Generation**. In Proceedings of the 2nd Workshop on Machine Reading for Question Answering, EMNLP 2019.

- **Haritz Puerto***, Doyeon Lim*, and Sung-Hyon Myaeng. **Analysis of Answer Type Application Ability of State-of-the-Art Reading Comprehension Models for Question Answering Task**. In Proceedings of the Korea Computer Congress (2019). **Best Paper Award**.