

# Clickbait Spoiling at SemEval 2023

## Call for Participation

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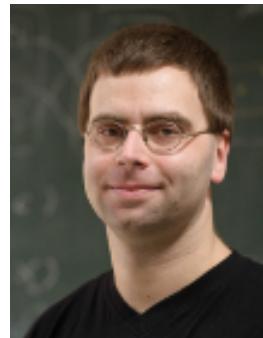
26th October, 2022



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<sup>3</sup>Leipzig University

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[www.webis.de](http://www.webis.de)

# Clickbait Spoiling at SemEval'23

Spoilers: The Dark Side



# Clickbait Spoiling at SemEval'23

## Spoilers: The Dark Side



- ❑ A spoiler is a short summary that reveals details of a plot
- ❑ Accidentally seeing a spoiler may ruin the experience
- ❑ Wikipedia had spoiler alerts until 2007

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# Clickbait Spoiling at SemEval'23

## Spoilers: The Light Side



Lifehacker @lifehacker

...

How to keep your workout clothes from stinking:

[lifehac.kr/57YOuEZ](http://lifehac.kr/57YOuEZ)



Clickbait [Potthast et al., 2016]

- Social-media posts that create a curiosity gap to generate clicks
- Resolution is usually ordinary or trivial

# Clickbait Spoiling at SemEval'23

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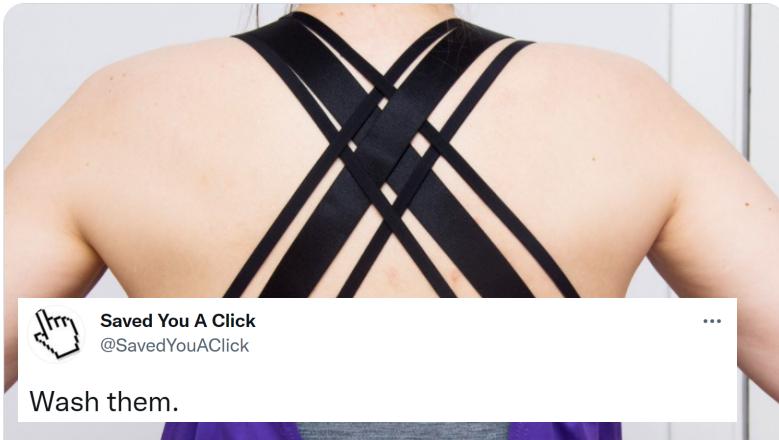


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Wash them.

## Clickbait [Potthast et al., 2016]

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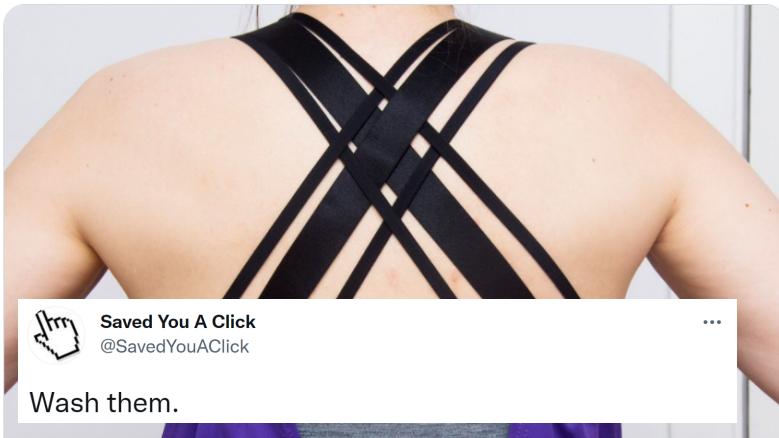
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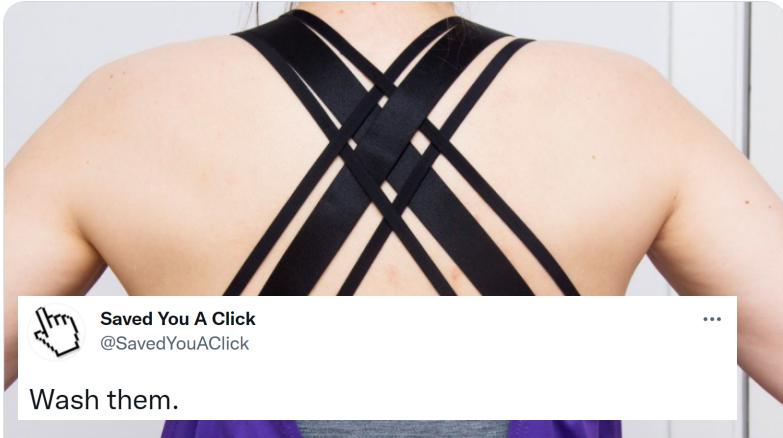
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## Spoilers: The Light Side



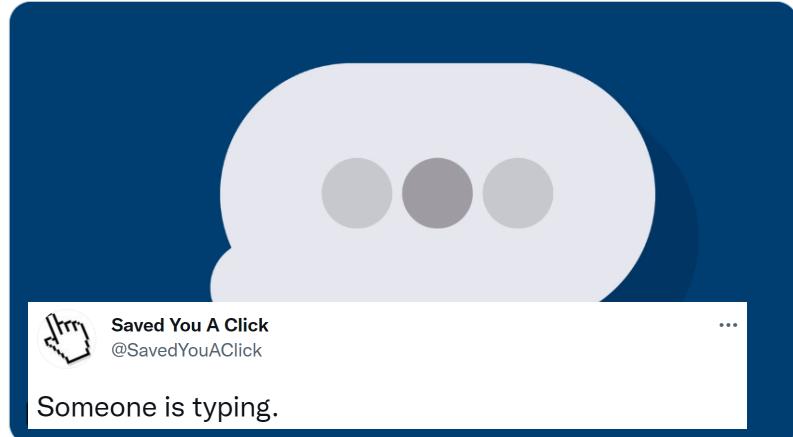
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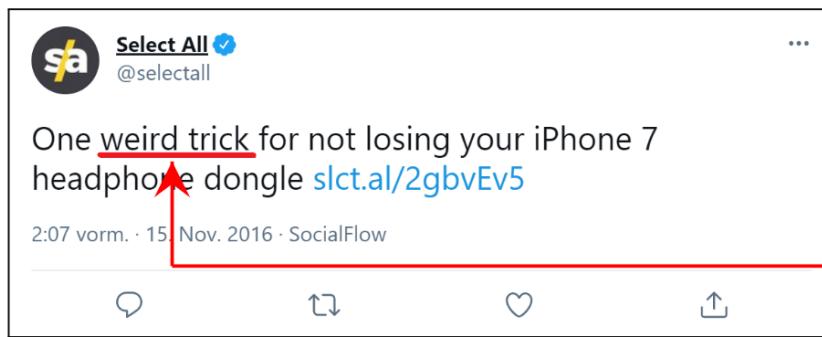
## Clickbait Spoiling [Hagen et al., 2022]

- ❑ Generating a short text that satisfies the curiosity gap

# Shared Task on Clickbait Spoiling at SemEval'23

## The Dataset

5,000 spoilable clickbait posts with high quality annotations

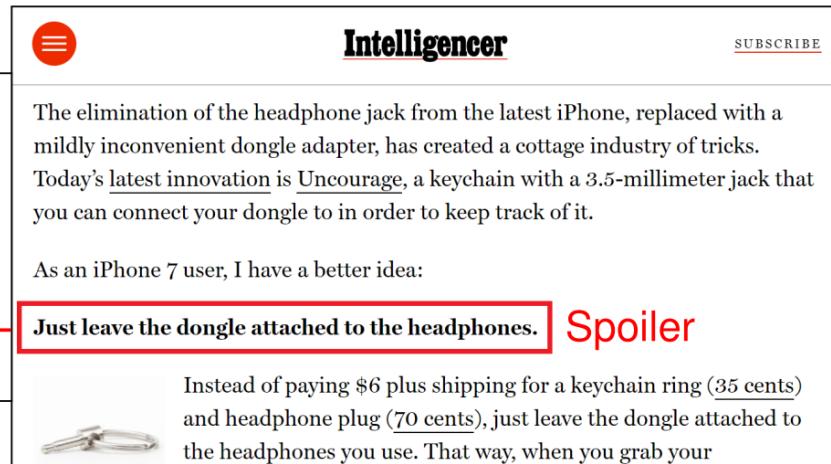


Select All  @selectall

One weird trick for not losing your iPhone 7 headphone dongle [slct.al/2gbvEv5](https://slct.al/2gbvEv5)

2:07 vorm. · 15. Nov. 2016 · SocialFlow

...



 **Intelligencer** [SUBSCRIBE](#)

The elimination of the headphone jack from the latest iPhone, replaced with a mildly inconvenient dongle adapter, has created a cottage industry of tricks. Today's latest innovation is Uncourage, a keychain with a 3.5-millimeter jack that you can connect your dongle to in order to keep track of it.

As an iPhone 7 user, I have a better idea:

**Just leave the dongle attached to the headphones.** Spoiler

 Instead of paying \$6 plus shipping for a keychain ring (35 cents) and headphone plug (70 cents), just leave the dongle attached to the headphones you use. That way, when you grab your

# Shared Task on Clickbait Spoiling at SemEval'23

## The Dataset

5,000 spoilable clickbait posts with high quality annotations

A screenshot of a Twitter post from the account @selectall. The post contains a link to a "weird trick" for iPhone 7 headphones. A red arrow points from this link to a news article from "Intelligencer" magazine. The article discusses the removal of headphone jacks from iPhones and suggests a keychain with a 3.5-millimeter jack as a solution. A red box highlights the text "Just leave the dongle attached to the headphones." followed by the word "Spoiler".

**Intelligencer** [SUBSCRIBE](#)

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Construction:

- 5 social media accounts that manually spoil clickbait
- Webis Clickbait-17 dataset

560 hours annotation effort:

- Manual post selection, main content extraction, and spoiler identification
- 3 types of spoilers: Phrase, Passage, Multi

# Shared Task on Clickbait Spoiling at SemEval'23

## Spoiler Types

### □ Phrase

- $\leq 5$  consecutive words
- Often entities and nouns

Someone is typing.

### □ Passage

- $>5$  consecutive words
- Often Descriptions

**Just leave the  
dongle attached to  
the headphones.**

### □ Multipart

- Lists closing multiple curiosity gaps

**1. Set Your Alarm with  
*Precision***  
**2. Write Down 1 Daily  
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# Shared Task on Clickbait Spoiling at SemEval'23

## Task 1: Spoiler type classification

- ❑ Input: Post, Article
- ❑ Output: Phrase, Passage, Multipart
- ❑ Related work:
  - Query intent prediction  
[Alexander et al.: ORCAS-I: Queries Annotated with Intent using Weak Supervision]
  - Query reformulation
  - Query understanding  
[Blog by Daniel Tunkelang on Query Understanding. See <https://queryunderstanding.com/>]

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## Task 2: Spoiler generation

- ❑ Input: Post, Article, Spoiler type
- ❑ Output: text that satisfies the curiosity gap of the post
- ❑ Related work:
  - Question answering
  - Passage retrieval
  - Snippet Generation

# Shared Task on Clickbait Spoiling at SemEval'23

## Connection to your Course

- Apply concepts from the lecture to an unsolved research problem
- Mindset of a Shared Task: [\[sharki-project.github.io/\]](https://sharki-project.github.io/)  
Friendly scientific competition on a relevant research problem for which its participants develop (computerized) solutions
- Follow your passion. Many directions yield valuable contributions:
  - Effectiveness (e.g., deep learning models or ensembles)
  - Efficiency (e.g., fast removal of non-relevant passages)
  - Creativity (e.g., address the problem in a completely different way)
  - Community impact (e.g., resources that might be helpful for others)
  - Insightfulness (e.g., replace parts of the pipeline with an manual oracle)
  - ...
- Entrypoint to everything: [clickbait.webis.de](http://clickbait.webis.de)
- Use the forum for questions, help, or if you want to share some resources  
[\[tira.io/c/semeval23-task-5-clickbait-spoiling\]](https://tira.io/c/semeval23-task-5-clickbait-spoiling)

# Shared Task on Clickbait Spoiling at SemEval'23

Enough Preliminaries...



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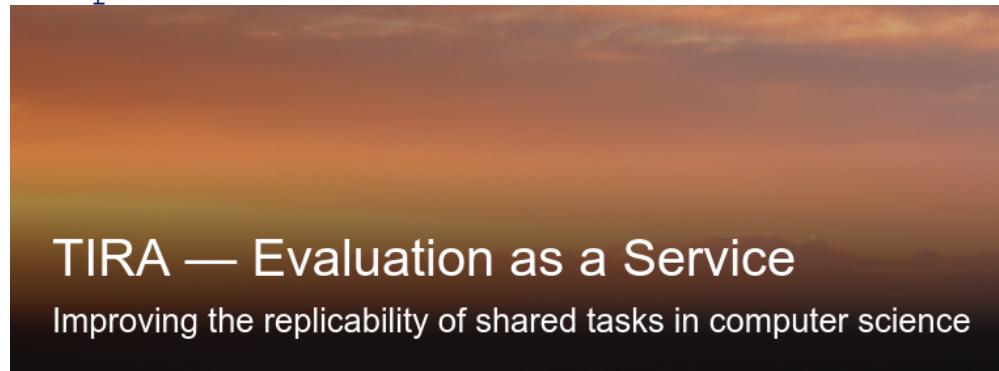
Time to get our hands dirty :)

# Shared Task on Clickbait Spoiling at SemEval'23

## Software Submissions with TIRA

- ❑ We ask you to submit working software
- ❑ Benefits: Replicability + Reproducibility
- ❑ Procedure:
  1. Implement your approach in Docker images
  2. Upload the Docker image(s) to your dedicated image registry in TIRA
  3. Your approach is executed in a Kubernetes cluster

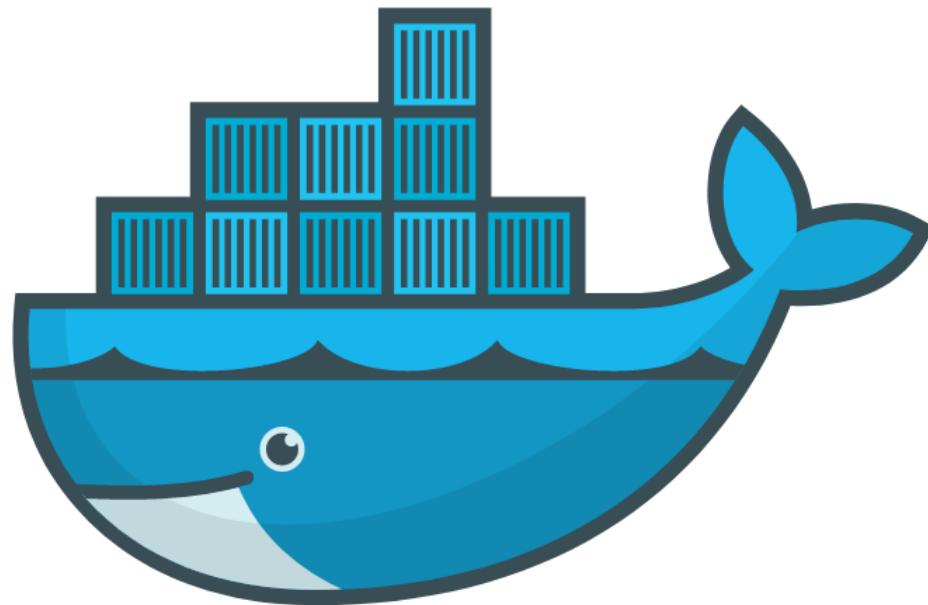
<http://tira.io>



# Shared Task on Clickbait Spoiling at SemEval'23

## Docker Basics

- ❑ Goal: You can start/stop/build (your) software
- ❑ Docker installation instructions are available for all operating systems  
[<https://docs.docker.com/get-docker/>]
- ❑ We will provide all commands and resources

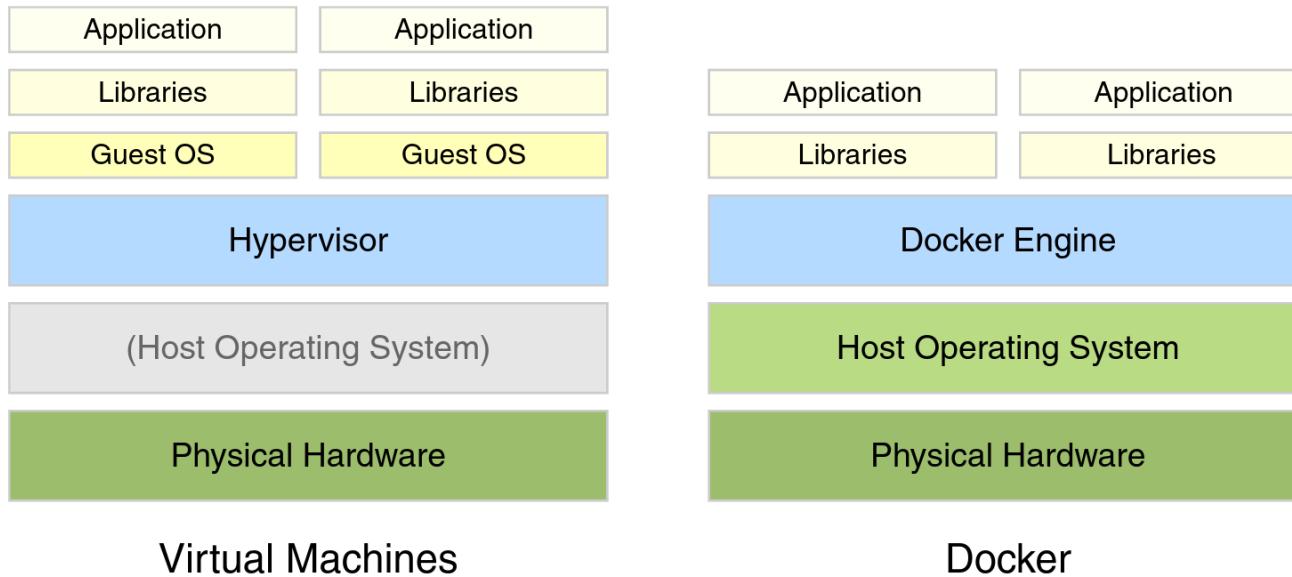


# Shared Task on Clickbait Spoiling at SemEval'23

## Use Cases for Docker

- ❑ Run guest systems as containers
- ❑ Shipping and running micro services as portable images
- ❑ Exploring and experimenting with new technologies
- ❑ Encapsulation mechanism to deploy applications in parallel without conflicts

## Virtual Machines vs. Docker



# Shared Task on Clickbait Spoiling at SemEval'23

## Example Docker Commands

- Many images available on [hub.docker.com](https://hub.docker.com)
- Run a bash shell: `docker run --rm -ti bash`
  - `--rm`: Remove container after completion
  - `-ti`: Attach stdin and stdout
  - ToDo: Run above command without `-ti`
  - Attention: Changes within the image are not persistent

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- ❑ Bash image with volume mounts:  
`docker run --rm -ti -v ${PWD}:/bla bash`
  - `-v <HOST_PATH>:<CONTAINER_PATH>`: Mount the directory specified in `<HOST_PATH>` on the system to the directory specified in `<CONTAINER_PATH>` within the container

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  - `-v <HOST_PATH>:<CONTAINER_PATH>`: Mount the directory specified in `<HOST_PATH>` on the system to the directory specified in `<CONTAINER_PATH>` within the container
- ❑ Similar: Forwarding ports with `-p <HOST_PORT>:<CONTAINER_PORT>`:  
`docker run --rm -ti -p 8888:8888 -v ${PWD}:/home/jovyan/work jupyter/datascience-notebook`

# Shared Task on Clickbait Spoiling at SemEval'23

## Baselines for Task 1: Spoiler Type Classification

- ❑ Hands-On: Build, deploy, and run baselines for task 1  
[[clickbait.webis.de#baselines](http://clickbait.webis.de#baselines)]
- ❑ Step-by-Step guide is available online  
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### Naïve Baseline

- ❑ Predict always: phrase

### Transformer Baseline

- ❑ Input: Clickbait post + linked article
- ❑ Library: Simple Transformers [<https://simpletransformers.ai/>]
- ❑ Trained in Google Colab [<https://colab.research.google.com/>]

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### Effectiveness (Validation Set)

Baseline	Balanced Accuracy
Naïve	33.3
Transformer	<b>73.4</b>

# Shared Task on Clickbait Spoiling at SemEval'23

## Suggestions on How to Continue for Task 1

- Approaches that we tried that did not work?
  - Feature-based approaches: SVM, Naïve Bayes, XGBoost, LightGBM, ...
- Approaches that we tried that worked “better”: Transformer approaches

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## Untested Ideas: Document Engineering

- ❑ Identify multipart spoilers via the document structure?
- ❑ For instance: Does the document contains an explicit/implicit enumeration?

**1. Set Your Alarm with  
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## Untested Ideas: Generate and Test

- ❑ Generate phrase, passage, and multipart spoilers
  - Using a wide range of approaches for task 2?
- ❑ Use Query Performance Prediction to identify most promising spoiler type
- ❑ Would also be very useful in general
  - Only show spoilers when we are confident that they are correct

# Shared Task on Clickbait Spoiling at SemEval'23

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## Untested Ideas: Lots of more Ideas :)

- ❑ Use pre-trained models from query intent prediction?  
[Alexander et al.: ORCAS-I: Queries Annotated with Intent using Weak Supervision]
- ❑ Query reformulation:
  - Is the transformer baseline more effective with clickbait posts reformulated as proper search queries?
  - If so, can the post automatically reformulated?
  - Is proper reformulation all we need? (I.e., spoiling becomes obsolete?)
- ❑ Can other query understanding approaches be applied?  
[Blog by Daniel Tunkelang on Query Understanding. See <https://queryunderstanding.com/>]

# Shared Task on Clickbait Spoiling at SemEval'23

That Was a Lot of Content in a Short Time!



# Shared Task on Clickbait Spoiling at SemEval'23

Time for Some Rest Before We Continue with Task 2 ...



# Shared Task on Clickbait Spoiling at SemEval'23

Time for Some Rest Before We Continue with Task 2 ...



No... Not this type of rest. But maybe you have some questions?

# Shared Task on Clickbait Spoiling at SemEval'23

We Also Have Some Questions



[sharki-project.github.io/]

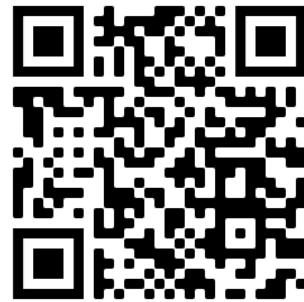
- What you have learned so far:
  - What a shared task is
  - How to participate in a shared task

# Shared Task on Clickbait Spoiling at SemEval'23

We Also Have Some Questions



[sharki-project.github.io/]



[umfrage.uni-leipzig.de/index.php/366989]

- What you have learned so far:
  - What a shared task is
  - How to participate in a shared task
- What we would like to learn:

**Are shared tasks suitable for teaching?**

- Please participate in a short survey before, during, and after your project
- First survey: [umfrage.uni-leipzig.de/index.php/366989](http://umfrage.uni-leipzig.de/index.php/366989)

# Shared Task on Clickbait Spoiling at SemEval'23

## Baselines for Task 2: Spoiler Generation

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### Naïve Baseline

- ❑ Spoil a clickbait post with the title of the linked article

### Transformer Baseline

- ❑ Input: Clickbait post + linked article
- ❑ Library: Hugging Face Question Answering  
[[https://huggingface.co/docs/transformers/tasks/question\\_answering](https://huggingface.co/docs/transformers/tasks/question_answering)]
- ❑ Pre-trained on squad, later fine-tuned on clickbait dataset in Google Colab

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### Effectiveness (Validation Set)

Baseline	BLEU-Score
Naïve	0.021
Transformer	<b>0.382</b>

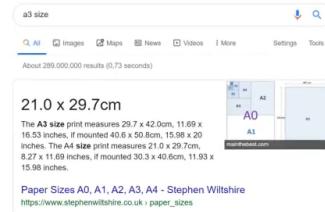
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## Suggestions on How to Continue for Task 2

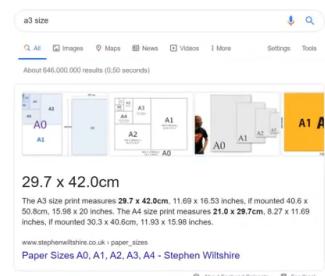
- Approaches that we tried that did not work?
  - Passage retrieval / question answering for passage / multipart spoilers
- Approaches that we tried that “worked”:
  - Question answering for phrase spoilers

Ideas: Test more extractive QA approaches for Multipart spoilers

- Advanced IR Course by Sebastian Hofstätter has a tutorial on extractive QA  
[<https://www.youtube.com/watch?v=6FNISntK6Sk>]



Google.com – 14.10.2019



Google.com – 3.3.2020

Paper	mm	inches
A1	594 x 841 mm	23.4 x 33.1 inches
A2	420 x 594 mm	16.5 x 23.4 inches
A3	297 x 420 mm	11.7 x 16.5 inches
A4	210 x 297 mm	8.3 x 11.7 inches
7 more rows		

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## Ideas: Recursive Spoiler Generation for Multipart spoilers

- Predict an initial spoiler
- Remove corresponding spoiler from the linked document
- Repeat until complete

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  - Question answering for phrase spoilers

## Some more Ideas

- ❑ Given a spoiler candidate: predict if the spoiler is complete or not
- ❑ Ensemble approaches
- ❑ Redo Passage retrieval (did not work for us, maybe we made something wrong?)
- ❑ Successively remove non-relevant parts of the document

# Clickbait Spoiling at SemEval'23

The clickbait spoiling challenge will be a part of SemEVAL 2023

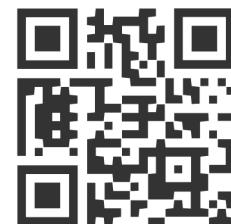
- ❑ Colocated with a major NLP conference

Software submissions to improve reproducibility

- ❑ Submit docker images to tira.io

Timeline

- ❑ Soon: Register your group
- ❑ December 1, 2022: Early bird software submission
- ❑ January 10, 2023: Submission deadline
- ❑ February 2023 (Optional): Participant paper submission  
[Examples: [Bondarenko'18](#), [Reusch'21](#), [Zhou'17](#)]
- ❑ February 2023 (Optional): Review a foreign paper
- ❑ Summer 2023 (Optional): SemEval



[clickbait.webis.de](http://clickbait.webis.de)

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- ❑ February 2023 (Optional): Review a foreign paper
- ❑ Summer 2023 (Optional): SemEval



[clickbait.webis.de](http://clickbait.webis.de)

**Thank You!**

# Clickbait Spoiling at SemEval'23

## Ein Paar weitere Lustige Beispiele

- Beispiel aus Deutschland vom 18.10.2022  
[<https://twitter.com/niggi/status/1582117029750132737>]
- Simpsons Episode zu “Spoiler Boy”  
[<https://www.fernsehserien.de/die-simpsons/folgen/31x14-spoiler-boy-1379464>]