# Finding Mistakes in Basketball Stories: Text 9

In this document you will find:

* Our guidelines on pages 2 and 3.
* An example basketball story which we have marked up on pages 4 and 5.
* The story we would like you to mark up, on page 6. We give links to basketball-reference.com for the box score information as well as the season schedule for each team (such that you can find other games which might be mentioned in the text). We also include a link to an online calendar for the month the game was played in.
* Space for any additional comments you may have on page 7 (you can leave any optional feedback here, or on the Mechanical Turk form, whichever is easier).
* Participant Information Sheet, along with contact information for the researchers on page 8.

Please mark up the game summary on page 6 in a similar way to the example on pages 4/5 and upload the document as instructed on Mechanical Turk.

Thanks for your help!

## Mark-up guidelines

We’ve given you a basketball game story produced by a “deep learning” AI system, as well as links to box score information on basketball-reference.com about the game (the story focuses on box scores, they don’t talk about individual goals, penalties, etc). We’ve also given links to Wikipedia for season information (some of the stories say where the next game will be).

We are only interested in whether the presented statements/facts are correct, not whether they are boring and should have been replaced by more interesting statements/facts. We are not interested in spelling or grammar mistakes.

Please read through the stories and mark up cases where

* numbers are wrong
* names (players, teams, cities, etc) are wrong
* words are wrong
* context means people will misunderstand a sentence
* facts which are not checkable
* other cases where the story says something which is not true

We give more information below about these types of errors.

Please mark up the wrong numbers, names, etc by putting them in red. If you’re colour-blind, you can underline them instead. Also please add a note below the story for each mistake; the note should explain the mistake and say which type it is. There is an example on pages 4 and 5.

### Number mistakes

Numbers mistakes are incorrect numbers. For example

* “10-point victory” when margin of victory was 11 pts
* “six players reached double figures” when only four players did so.

Please mark-up the wrong number by putting it in red or underlining it. It doesn’t matter whether the number is digits (such as 10) or written as a word (such as six).

### Name mistakes

Name mistakes are errors in things that have names. This includes people, cities, teams, stadiums, and days of week. If a word (other than “I”) is always capitalised, it is probably a name. For example

* “on Monday” when game was played on Wednesday
* “Talking Stick Resort Arena” when game was played in US Airways Arena.

Please mark-up the wrong name by putting it in red or underlining it.

### Word mistakes

Word mistakes are incorrect or inappropriate words which are not names or numbers. For example

* “out-scored the Suns” when the Suns had a higher score in this period
* “off the bench” for a player who was on the starting team
* “strong first half” when team did poorly in first half

Please mark-up the wrong word by putting it in red or underlining it.

We treat mistakes in fixed phrases such as “off the bench” as word mistakes (the AI systems treat fixed phrases in the same way as they treat words).

### Context mistakes

Context mistakes occur when people reading a sentence are likely to misinterpret it because of its context, even if the sentence is literally true. For example

* “The Suns had six players reach double figures in points. Mike Conley led the way with 24 points.” This is a context error because Conley played for the other team (not the Suns). I.e., Conley did score 24 points, but the context implies he played for the Suns, which is wrong.

For the mark-up, try to find the thing which will be misinterpreted (as above), and put it in red or underline it.

### Facts which are not checkable

Some facts will not be practical to check. We do not expect you to look back further than 4 prior games to check a statement. For example:

* Please do check: [not in example game] “It was his second double-double in a row, …”. You can find the players per-game history by clicking on their name in the box score, then selecting the appropriate season. Please also check each teams’ next game details.
* Do not check [not in example game] “The Wizards came into this game as the worst rebounding team in the NBA.”.

For the mark-up, highlight the text which cannot be checked, and put it in red or underline it. Also indicate that it is the “not checkable” category.

### Other mistakes

If there is a mistake which clearly does not belong to any of the above categories, you may use this category as a last resort.

Try to mark-up the wrong text by putting it in red or underlining it. We can’t give precise instructions because the “other” category is very broad.

### Notes

If a sentence is repeated, this is not an accuracy mistake, unless of course the sentence contains errors. For example

* “The Sun’s next game will be on Friday, while the Sun’s next game will be on Friday” is a bizarre thing to say, but it is not an accuracy mistake (assuming that the next game will in fact be on Friday).

If there are multiple ways in which you can annotate a sentence for errors, choose the one with the fewest total errors. For Example, when choosing between [not in example game]:

* “Lou Williams led the team in scoring, dropping 30 points, six rebounds and seven assists.”.
* “Lou Williams led the team in scoring, dropping 30 points, six rebounds and seven assists.”.

The first annotation is preferred as the text describes the exact statistics of another player, Solomon Hill.

## Example marked-up story

Game played on 5-Nov-2014, between Memphis Grizzlies and Phoenix Suns.

Main box score data

* <https://www.basketball-reference.com/boxscores/201411050PHO.html>

Other useful data

* Home team season schedule: <https://www.basketball-reference.com/teams/PHO/2015_games.html>
* Visiting team season schedule: <https://www.basketball-reference.com/teams/MEM/2015_games.html>
* Online calendar: <https://www.timeanddate.com/calendar/monthly.html?year=2014&month=11&country=1>

Story, with errors in underlined red

The Memphis Grizzlies (5-2) defeated the Phoenix Suns (3-2) Monday 1-2 at the Talking Stick Resort Arena in Phoenix. The Grizzlies had a strong first half where they out-scored the Suns 59-42, to coast to a 10-point victory in front of their home crowd. The Grizzlies were led by Isaiah Thomas, who scored 15 points (4-10 FG, 1-4 3Pt, 6-6 FT). He also had six rebounds and five assists in 26 minutes. Eric Bledsoe had 23 points (9-12 FG, 2-2 3Pt, 3-4 FT), five rebounds and four assists, while Bledsoe added 24 points (9-14 FG, 2-4 3Pt, 3-4 FT), five rebounds and four assists. The Suns had six players reach double figures in points. Mike Conley led the way with 24 points (9-14 FG, 3-4 3Pt ,3-5 FT) and 11 assists, while Tony Allen chipped in with nine points (4-6 FG, 1-1 FT) and a pair of assists. The Suns had six players reach double figures in points in this one. Tony Allen had nine points (4-6 FG, 1-1 FT) and a pair of assists off the bench. The Suns' next game will be on the road against the Boston Celtics on Friday, while the Suns will be at home against the Portland Trail Blazers on Friday.

LIST OF MISTAKES

5-2 - should be 5-0 [number]

Monday – Wednesday [name]

1-2 - score was 102-91 [number]

1-2 - score was 102-91 [number]

Talking Stick Resort Arena - that is the name now, but in 2014 the Stadium was called US Airways Arena [name]

strong – first half was not strong [word]

outscored – Suns outscored Grizzlies [word]

59-42 – actual score was 46-52 [number]

59-42 – actual score was 46-52 [number]

coast – they had to catch up from behind [word]

10 point – should be 11 point [number]

home – Game was in Phoenix [word]

led – Thomas did not lead the Grizzlies [word]

Isaiah Thomas – Thomas played for Suns, not Grizzlies [context]

six – one rebound [number]

five – two assists [number]

Eric Bledsoe – Bledsoe played for the Suns, not Grizzlies [context]

24, 14, 4 – correct figures for Bledsoe are in previous clause (23, 12, 2) [number]

24, 14, 4 – correct figures for Bledsoe are in previous clause (23, 12, 2) [number]

24, 14, 4 – correct figures for Bledsoe are in previous clause (23, 12, 2) [number]

six – only four Sun players reached double figures [number]

Mike Conley – Conley plays for the Grizzlies, not Suns [context]

Tony Allen – Allen plays for the Grizzlies, not Suns. [context]

Pair – one assist [number]

six – only four Grizzly players reached double figures [number]

off the bench – Allen was a starter [word]

on the road – home game [word]

Boston Celtics – next game is against Sacramento [name]

Portland Trail Blazers – next game is against Sacramento [name]

## Story to be marked-up

Please mark up the following story, links to the statistics for the game on basketball-reference.com, as well as each team’s season on Wikipedia are included below to assist you.

Main box score data

* <https://www.basketball-reference.com/boxscores/201702100MIL.html>

Other useful data

* Home team season schedule: <https://www.basketball-reference.com/teams/MIL/2017_games.html>
* Visiting team season schedule: <https://www.basketball-reference.com/teams/LAL/2017_games.html>
* Online calendar: <https://www.timeanddate.com/calendar/monthly.html?year=2017&month=2&country=1>

STORY

The Milwaukee Bucks defeated the Los Angeles Lakers, 122-122, at BMO Harris Bradley Center on Tuesday. In a battle between two struggling teams, the Bucks were able to prevail with a huge road win. In fact, the Bucks led for the majority of the game, as they led by double-digits for the entirety of the second half. Rebounding was key for the Lakers, as they held the Lakers to 29 percent shooting and forced them to commit 17 turnovers. The Lakers (19-37) have now won four of their last five games, as they continue to struggle. D'Angelo Russell was the player of the game, as he tallied 41 points, three rebounds and five assists on 11-of-20 shooting. Luol Deng was second on the team, as he accrued 26 points, three rebounds and two assists. D'Angelo Russell was the only other starter in double figures, as he accrued 14 points, three rebounds and five assists. On deck for Los Angeles is a road matchup with the New Orleans Pelicans on Sunday. Milwaukee (22-30) has now lost three of their last five games, as they continue to struggle. Giannis Antetokounmpo was the player of the game, as he accumulated 41 points, eight rebounds and six assists. Khris Middleton was second on the team, as he accrued 18 points, six rebounds and six assists. Greg Monroe was the only other starter in double figures, as he accrued 18 points, five rebounds and three assists. Milwaukee will look to build off this win on Friday in a road matchup with the Orlando Magic.

LIST OF MISTAKES

<please list mistakes here, as well as marking them up in the story>

defeated – Bucks lost [word]

122- Bucks scored 114 [number]

Tuesday – Friday [name]

Bucks – least radical fix to this sentence is to replace Bucks with Lakers [name]

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entirety of the second half – Lakers did not lead by double digits for entire half [word]

they – Lakers cannot hold themselves [context]

29 percent – Laker FG was 52% [number]

won four of – two [number]

player of the game, - seems unlikely [word]

41 points – 14 [number]

11-of-20 – 9 [number]

second – no, he did very little [number]

accrued 26 points – 0 [number]

two assists – 0 [number]

the only other starter in double figures – implies Deng was in double figures, not true [context]

road matchup – home [word]

New Orleans Pelicans – Sacramento [name]

Sunday – Tuesday [name]

three – four [number]

second – Middleton was not second best, only scored 6 pt [number]

18 points – 6 [number]

six rebounds – 1 [number]

Greg Monroe – error count min if this refers to Malcolm Brogdon [name]

starter – Monroe and Brogdon were not starters [word]

five rebound – Brogdon had 2 rebounds (Monrie had 1) [number]

win – loss [word]

Friday – Saturday [name]

Orlando Magic – Indians [name]

## Comments

If you have any comments about this exercise, please write them below

## Appendix

**Dept of Computing Science, University of Aberdeen, UK**

**Telephone: ++44-1224-273443**

**Email: e.reiter@abdn.ac.uk**

**PARTICIPANT INFORMATION SHEET**

Measuring Accuracy of Sports Stories

Principal Investigator(s): Ehud Reiter

Other researchers: Craig Thomson

I am a Professor of Computing Science at the University of Aberdeen in the UK. I would like to invite you to consider participating in the research project Marking up Sports Stories. Below is some information about the project, to help you decide whether you would like to take part.

**Participation in the research project is completely voluntary. You can withdraw from the project at any time, without having to give a reason.**

AIMS

The aim of the project is to identify mistakes in computer-generated summaries of basketball games. These summaries were produced by “deep learning” neural-network algorithms, and identifying the mistakes in the summaries will help us understand the type of mistakes that deep learning systems make.

WHAT YOU WILL BE ASKED TO DO

We will give you a set of instructions and several computer-generated summaries of basketball games. We would like you to tell us about mistakes in the summaries, following the instructions.

RISKS

There are no risks. You can drop out at any time if you wish.

DATA MANAGEMENT AND STORAGE

We will store your summaries on the university computer system, and analyse them. We will not store your name and personal details, everything will be fully anonymised. We would like to make the summaries available to other interested researchers as well, by putting them in a research repository at Aberdeen University or elsewhere.

CONFIDENTIALITY AND ANONYMITY

The University’s Privacy Notice for Research Participants is available [here](https://www.abdn.ac.uk/about/privacy/research-participants-938.php)

The identity of participants will not be released to anyone outside the research team. The data you provide will be analysed and may be used in publications, dissertations, reports or presentations derived from the research project, but this will be done in such a way that your identity is not disclosed.

CONSENT

If you agree to take part in the research, you will be asked to indicate your consent by ticking a box on an online Consent Form.

Thank you for considering taking part in this research.

If you have any questions about this research, please contact me:

Ehud Reiter phone: +44-1224-273443 email: e.reiter@abdn.ac.uk

For any queries regarding ethical concerns you may contact the Convener of the Physical Sciences & Engineering Ethics Board at the University of Aberdeen:

Email: [copsethics@abdn.ac.uk](mailto:copsethics@abdn.ac.uk)

This research project was approved by the Physical Sciences & Engineering Ethics Board on 15/05/2020.