wikiFeed: Keeping Wiki Content Current via News Sources

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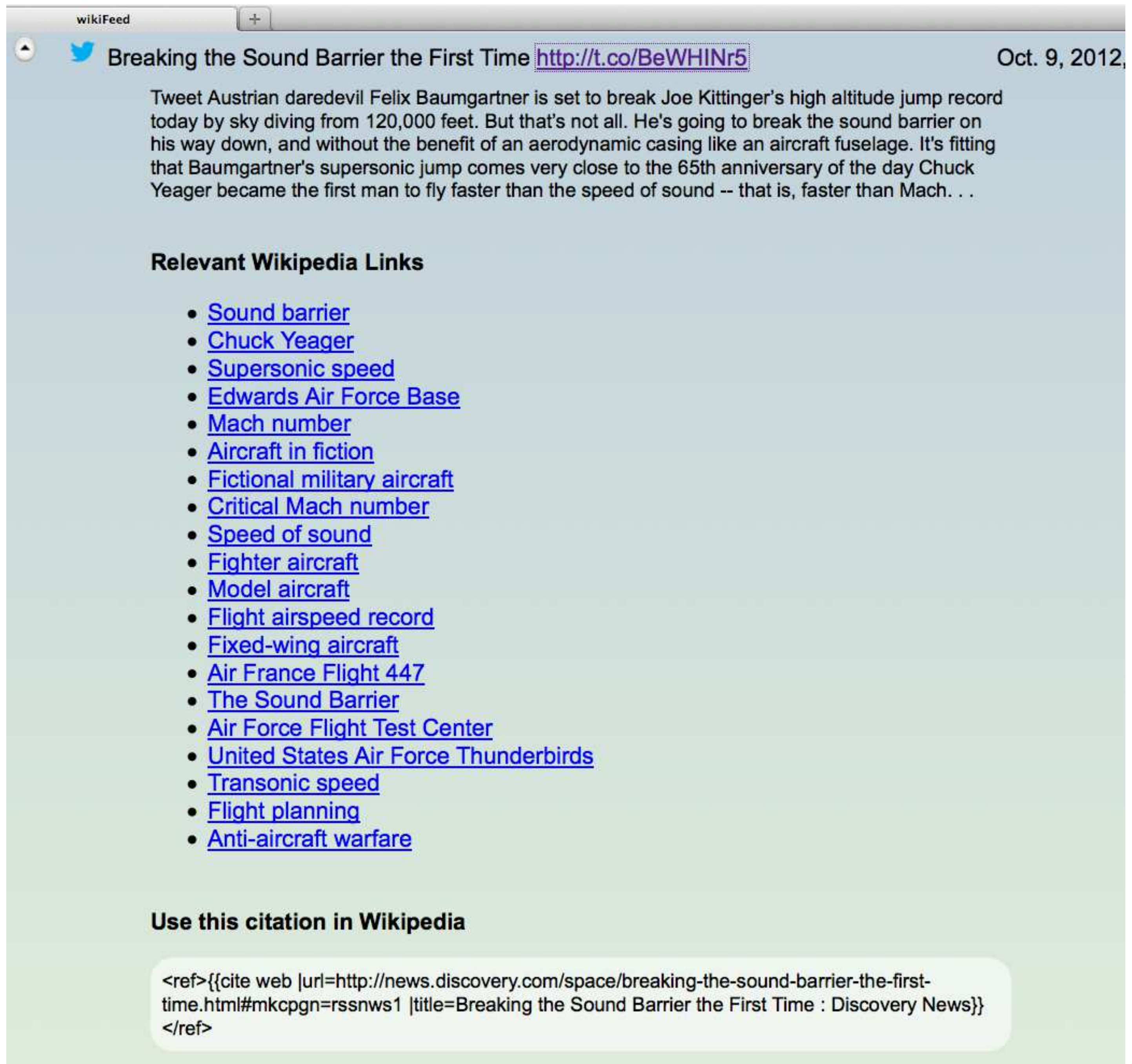
Overview

- Maintaining current and reliable information in a wiki can be challenging
- wikiFeed assists wiki contributors with this task
- Helps users track news, makes recommendations as to where content should be integrated into wiki, and assists users in citing sourced content
- Demonstration built on English Wikipedia



Breaking the Sound Barrier the First Time http://t.co/BeWHINr5 Oct. 9, 2012,

Tweet Austrian daredevil Felix Baumgartner is set to break Joe Kittinger's high altitude jump record today by sky diving from 120,000 feet. But that's not all. He's going to break the sound barrier on his way down, and without the benefit of an aerodynamic casing like an aircraft fuselage. It's fitting that Baumgartner's supersonic jump comes very close to the 65th anniversary of the day Chuck Yeager became the first man to fly faster than the speed of sound -- that is, faster than Mach. . .

Relevant Wikipedia Links

- Sound barrier
- Chuck Yeager
- Supersonic speed
- Edwards Air Force Base
- Mach number
- Aircraft in fiction
- Fictional military aircraft
- Critical Mach number
- Speed of sound
- Fighter aircraft
- Model aircraft
- Flight airspeed record
- Fixed-wing aircraft
- Air France Flight 447
- The Sound Barrier
- Air Force Flight Test Center
- United States Air Force Thunderbirds
- Transonic speed
- Flight planning
- Anti-aircraft warfare

Use this citation in Wikipedia

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<ref>{{cite web |url=http://news.discovery.com/space/breaking-the-sound-barrier-the-first-
time.html#mkcpgn=rssnws1 |title=Breaking the Sound Barrier the First Time : Discovery News}}
</ref>
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Workflow and Interface Design

- Design goal: Help wiki contributors identify new content, and make recommendations to make it easy to add that content as well as cite source content appropriately
- News content sources: RSS and Twitter feeds
- Headlines and content pulled down on initial setup and every 30 minutes
- User interface resembles RSS reader
- Headlines presented, and are clickable to see source news article
- On request, a *a list of 20 automatically recommended Wikipedia article titles for which news content may belong* is shown
- Sorted in descending order by their relevance to the news source
- Wikipedia article titles are clickable, and open up the associated Wikipedia article
- Below the list of relevant Wikipedia articles, wikiFeed presents an *automatically generated citation to that news source appropriately formatted in Wiki markup*

For a Wikipedia editor looking to add content, this setup provides a streamlined and direct way to assist in finding and adding new information.

Implementation

- Implemented in Python using Django web framework, running on standard Apache web server
- RSS and Twitter feeds contain headlines and links, which are extracted according to format
- Actual text of a news source obtained by extracting whatever text is contained in the first link in headline
- Sphinx (`http://sphinxsearch.com/`) used for efficient matching
- Static recently available current-text Wikipedia dump used instead of online Wikipedia, for efficiency; content may change, but matching is more stable over time
- Keyword-based matching algorithm to find the most closely related Wikipedia articles to the news source of interest

Specifically, two-step process for article matching:

1. Find important keywords in news source: remove stopwords, then select the ten words from the news source with the highest tfidf values.
2. Use BM25 ranking function to rank similarity between a Wikipedia article and a the news source. Two different BM25 values are determined: one for the title of the Wikipedia article, and one for its body; weighted average is taken.

Based on above techniques, we construct a list of the 20 Wikipedia articles that best match a given list of keywords.

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