

The Washington Post
Democracy Dies in Darkness

MEDIA

This is how journalists figure out if all those Ukraine videos are real

Visual forensics allows reporters to pinpoint the location of images emerging from the conflict and verify their authenticity.



By [Elahe Izadi](#)

March 2, 2022 at 5:56 p.m. EST

Amid reports of fighting in Ukraine over the weekend, [one video](#) posted on social media captured an apocalyptic scene: multiple fires raging on a highway outside of an apartment building as smoke billowed and loud pops rang through the night.

It was gripping footage, but journalists who looked at it knew that many similar videos have turned out to not be what they seem: A clip of a supposed missile launch in Ukraine had actually been filmed [in Turkey](#) in 2016; an Instagram post purporting to show Russian planes over Kyiv actually depicted a Russian military flyover [two years ago in Moscow](#).

The Washington Post only deemed the fire video worthy of publication after a “visual forensics” team spent hours analyzing it and cross-referencing it with maps and other social media posts — eventually pinpointing the exact street corner in Kyiv where the inferno took place.

Newsrooms are increasingly relying on such teams to sort through a torrent of images emerging from the conflict, separating genuine videos from misinformation.

Unlike typical newsroom investigations that rely on private data to uncover stories and verify incidents, visual forensics uses open-source, widely available materials, such social media videos and photos, Google Maps, public databases and weather reports, or high-quality satellite images offered through paid subscriptions.

“This is a very rigorous process,” said New York Times visual investigations reporter Haley Willis. “We have similar verification standards as any other journalist. Very few journalists are going to write a story based on what one source is saying, unless it is *the* source. We’re the same: we wait for multiple points of corroboration.”

It’s often a group effort involving foreign correspondents and sources on the ground flagging content. Given the potential for propaganda and misinformation in a conflict zone, even videos from normally trustworthy sources need to be verified, and determining their authenticity requires a lot of patience, creativity and attention to detail.

The process begins with geolocation: pinpointing exactly where an image was recorded on a map, which Willis calls the “the bread and butter” of verification. “We’ll never publish a clip in our blog updates or tweets if we haven’t located it,” she said.

For that, forensic journalists dissect scenes pixel-by-pixel, looking for landmarks, silhouettes and other details, and cross-referencing images using free tools such as Google Earth or the Russian equivalent, Yandex, as well as satellite subscription services. They might also compare several videos of the same incident to unlock more clues. Sometimes something as small as a tile pattern on a roof can hint at where something took place.

Next, they try to establish *when* the recording was captured, which can be much more difficult and isn’t always possible. Sometimes reporters can access metadata — a kind of digital fingerprint that can reveal where and when something was filmed — but that isn’t always available or reliable. Otherwise, journalists might have to get creative and be especially observant, sometimes checking weather reports and figuring out the time of day based on the way objects cast shadows in the scene.

Verifying the video showing fires in Kyiv was a particularly painstaking task for The Post’s visual investigators, given that it was filmed at night and few background details were visible.

They found other social media videos that appeared to show the same incident filmed from much farther away. One had a caption that named a street. Visual forensics reporter Joyce Lee looked the street up on Google Maps and found a road in Kyiv by that name that passed by a metro station and the city’s zoo — landmarks that could be seen in some of the videos.

Still, they wanted to know precisely where the fire took place. So they “traveled” that road via satellite images, going frame-by-frame, until finally, a single letter painted on the road led them to the exact spot where the original video had been filmed.

“I was ready to give up and then I saw that little 'A' on the street,” said graphics reporter Atthar Mirza. “It’s kind of crazy what gives it away a lot of the time.”

Other details — a building silhouette, a little blue sign on a lamp post and an off-ramp — matched up to the scene, too. “This video was particularly important because it showed multiple things on the road on fire — it looked like a vehicle — and seemed close to the fighting,” Mirza said. They also discovered it wasn’t far from a government building. All these details were reported on The Post’s website early Saturday morning.

Christiaan Triebert 

@trbrtc · [Follow](#)



This video of a huge explosion in (allegedly) Ukraine is making the rounds. When mis/disinformation during war is rife, verification is key. Here's how online investigators quickly established the where, when, and what of the video:

Watch on Twitter

5:18 PM · Feb 27, 2022



[Read the full conversation on Twitter](#)



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In another case, Post visual forensic journalists were able to pinpoint the time and location of explosions over Kyiv by syncing up social media videos with time-stamped closed-circuit TV footage verified by Storyful, which specializes in verifying online content for news organizations worldwide.

But there are pitfalls these journalists have to avoid as well. Government sources in some places have a reputation for manipulating videos. And video investigators need to be careful not to draw conclusions about the images they can't back up, such as which side is responsible for a particular building explosion or fire. "We're really going to be only saying what we see in the video," said Post visual forensic reporter Sarah Cahlan.

They sometimes consult outside experts — say, to help identify munitions shown.

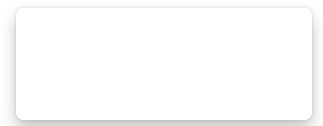
And while speed is important in covering a fast-moving conflict, "the bar is really high" on what gets published, Cahlan said. "You want to get it out as quickly as possible, but our most important thing is being accurate."

While some newsrooms have their own teams (The Post has seven people doing this work, and the Times has a team of 17), there's also a large online community of independent sleuths sharing their findings with one another. Bellingcat, a global investigative corps that's been a pioneer in this kind of open-source work, particularly in Ukraine, has been helping to verify incidents on a crowdsourced map with the London-based nonprofit Center for Information Resilience.

That map grew out of a CIR training of Eastern European journalists in January who were learning to geolocate videos of Russian military vehicles traveling toward the border; now, many of the images are coming from conflict areas within Ukraine.

The movement of that footage "into Ukraine really tells the story of what Russia's efforts were from the beginning," said CIR director Benjamin Strick, which was to "line up forces along the border" and then "essentially invade."

For those who doubt their methodology, CIR tweets out satellite imagery that clearly matches incidents they have pinpointed. In one, a building attacked in Kherson was mapped as less than 100 meters away from a kindergarten.



Centre for Information Resilience  · Mar 1, 2022 

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Destruction of hangar at Antonov International Airport, just outside of Kyiv. These satellite images from @Planet from Feb 20 and Feb 28 show the damage to the hangar.

Location: 50.592407, 30.211245

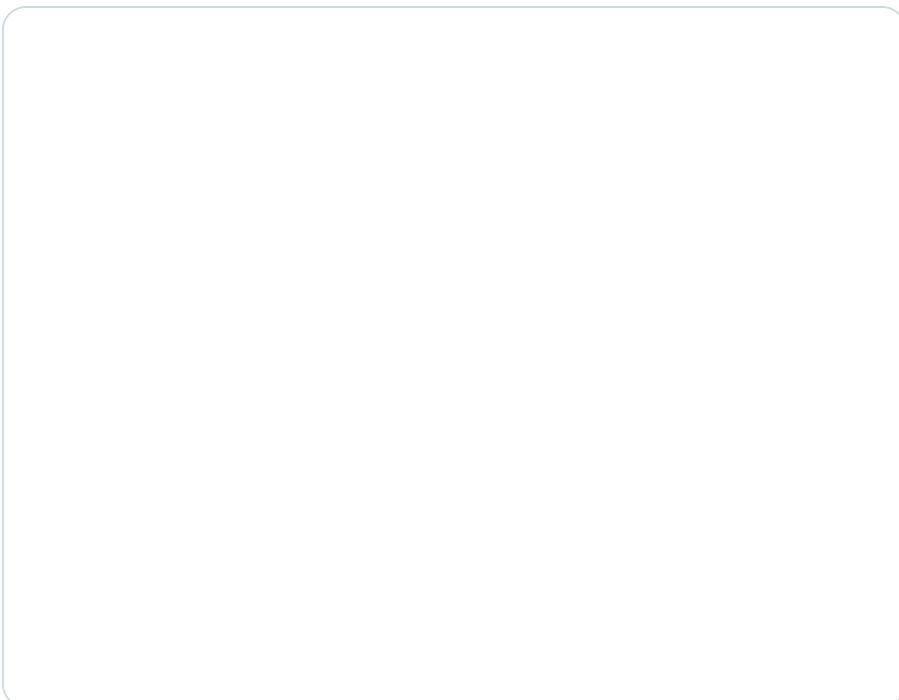


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Geolocation of footage showing bombing in Kherson. Note: this bombing was less than 100m from a kindergarten and children's play area.

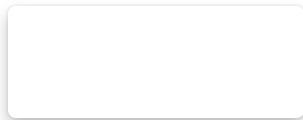
Location of strike: 46.678951, 32.613883



Michael A. Horowitz  @michaelh992

Replying to @michaelh992

Artillery strike against civilian buildings in Kherson, southern



Artillery strike against civilian buildings in Kyerson, southern
“That’s the beauty of this type of work,” said Willis of the New York Times, which also verified the building attack
near a kindergarten. #Ukraine “Everything we do is very transparent, so people who might not believe it can do the same thing
themselves. If you don’t think that’s the location, you can look for the location and decide.”

Some also criticize groups such as CIR for publishing the location of Russian troops, which could be used by
opposing military forces. “That’s not our intention. Our intention is to feed correct information into the
environment,” said Strick, who noted Ukraine civilians are using their map to figure out which roads are safe for
escape.

Other news organizations use similar tools to fact-check videos and photos. The Associated Press used reverse-image
searches to determine that a photo of Ukrainian men with mock rifles that supposedly proves the Russian invasion
was staged is actually a photo taken during a training session five days before the invasion.

Nearly all of the more than 100 members of Poynter’s International Fact-Checking Network do some kind of visual
forensic journalism now, which “wasn’t necessarily the case a few years ago,” said director Baybars Orsek. He said
members gained a lot of experience when online misinformation went rampant during the pandemic.

“Some of them are obviously more experienced than others,” Orsek said. “It’s still not a walk in the park for a lot of
organizations. It’s still very demanding work, but all of them do it to some extent.”

Even authenticating seemingly harmless content is important, said Orsek. “When media loses trust with the
audience, people basically turn to different sources that are not necessarily credible,” he said.

11:30 AM · Mar 1, 2022
Which is why visual forensics has become so crucial for covering a conflict in which a lot of footage is coming from
smartphones, filmed by regular people on the front lines.

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“It’s like civilians are the modern-day reporters,” said Strick, “and now it’s the newsroom’s job to go through the
wealth of footage and check it out.”