

Virtual Reality for Visual Reporting and World History Preservation – **ACT NOW!**

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1. What works? Stories.

- Facebook Lives
- Stories of people making refugees welcome
- Individual stories of hope - #TeamRefugees
- Personal stories told by celebrity influencers
- Thank you messages to supporters

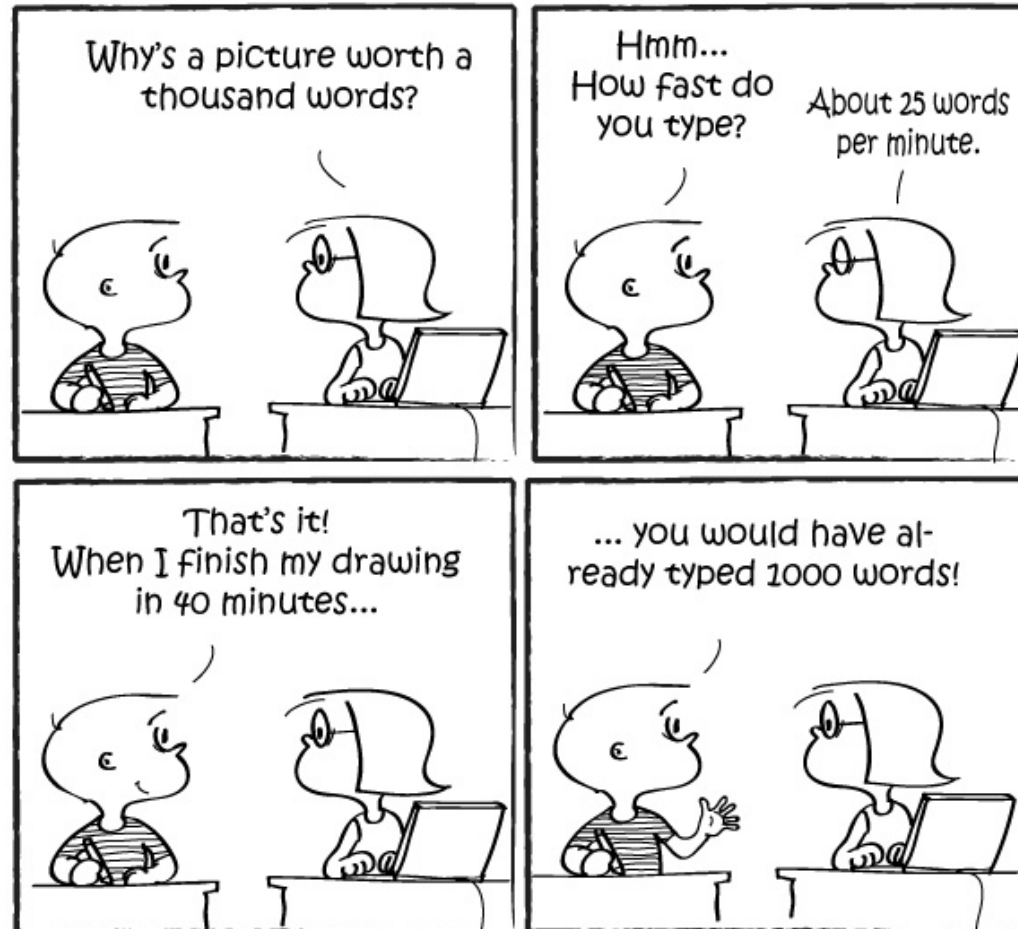


But what is the most effective way of telling a story?

Pictures!

A Picture is Worth 1000 Words

giggleBites



But cameras do deceive and sometimes
purposely lie



cheetah80

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2,894 次赞

3 天

cheetah80 Setting the record straight: this photo went viral over the past few days with a fake sob story. As if stealing my image was not enough it was even implied I had mental illness after I took it (seriously who comes up with this fiction?). The real story is simple: the cheetah caught a sickly impala and the cheetah mother was teaching her young ones how to kill it. There were no sacrificed mothers or babies involved. The real story is that news media are now also stealing my story and making money off it, and yes, there are also hundreds of messages I keep getting hurling abuse, asking about my (also fake!) depression and asking for me for gifts! (lenses and cameras no less!). People take a moment to learn about #fakenews and stop believing all you read on the Internet, even if a bollywood actor shares it. #rantover

The Decisive Moment



Video is a natural tool to record and show the
context

But what video?

YouTube: <https://youtu.be/sKlpOftn72Q>





What if we have virtual reality and panoramic video?

- We could look at all directions at the same time
- Anti-shaking is easier because everything is captured

The challenges

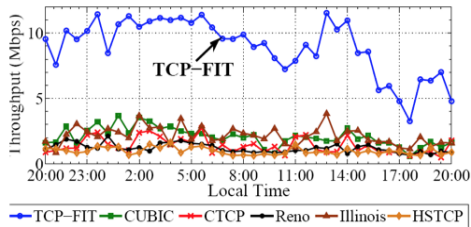
- It has been really expensive to produce panoramic video that can be viewed on VR gears
 - \$100k for a few minutes
 - You shoot the footage, then months to produce it!
 - Requires high bandwidth to upload or stream
 - Few people can really view it live

Not any more!

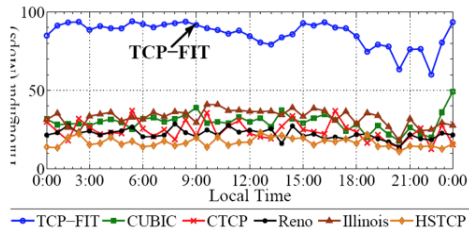
Bandwidth?



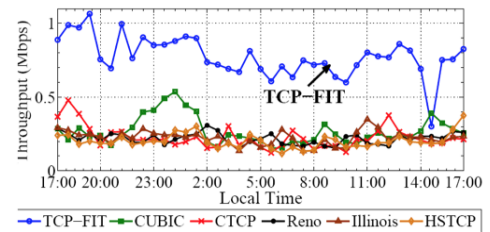
Networking



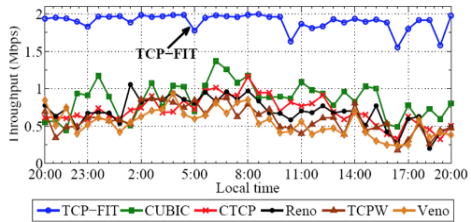
(a) Wired Network at Zurich



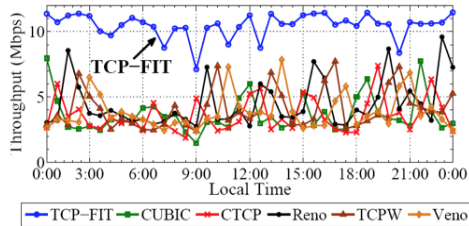
(b) Wired Network at Los Angeles



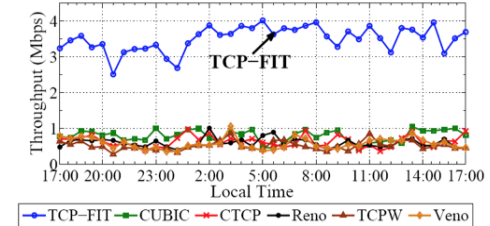
(c) Wired Network at Beijing



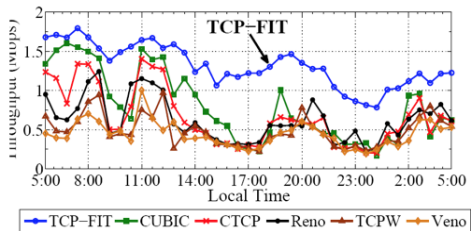
(d) Wireless Network at Zurich



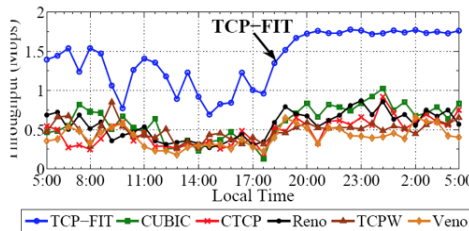
(e) Wireless Network at Los Angeles



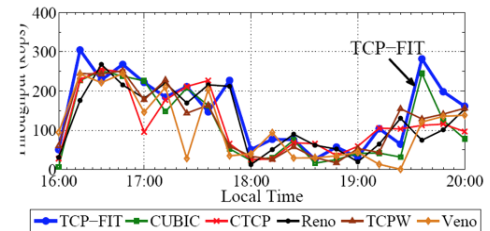
(f) Wireless Network at Beijing



(g) 3G Network at Beijing



(h) 3G Network at a town of Fujian Province



(i) 512k ADSL Network at Bangalore

The technology has been used by Samsung and Huawei to improve their online video services

VR Content Authoring

- We have the world's only real time 360 3D optical-flow based stitching algorithm
 - Commonly used stitching algorithms use simple feature matching
 - Seamless only for static scenes with static objects
 - No binocular support
 - Human marking of feature points, takes long time to setup
 - Optical flow based algorithm from Facebook and Google :
 - 75 days for 1 hr of video
 - Ours 4kx2k on a PC with two Nvidia cards (<\$1000 total)
 - [Compare for yourself](#)
 - Glass to glass latency is about 1 second – you can preview and monitor live, as opposed to discovering months later!





The Advantages

- Works with any camera setups
 - Professional grade such as SONY, Red, Arri, Ozo
 - Consumer: zcam, Insta360
 - Sports: GoPro rigs, etc.
- Online and offline, 3D360
 - Live broadcast and offline production
- Lower bandwidth H.264 compression
 - More networks more phones more users
- Optimized networking for better live quality

Why us?

- Co-founder of the world's first wireless video technology company, PacketVideo, software deployed by 300 million devices (wiki)
- Many patents licensed to Samsung, largest IP licensing agreement in the history of UCLA Engineering School (DailyBruin)
- Architect of the world's first single chip H.264 encoder with lowest power consumption in the industry (EE Times)
- IEEE Fellow – largest professional association in the world, 0.1% elected to Fellow every year
 - youngest professor of SCAU, youngest tenured professor of Tsinghua University, Youngest IEEE Fellow from a Chinese University when elected
- IEEE Best paper awards, nominations
- UCLA Ph.D. award
- Red Herring Global 100
- Frost & Sullivan 2016 Technology Leadership Award
- China Mobile, world's largest carrier uses our H.265 encoder software
- Huawei and Samsung uses our network optimization technology

FROST & SULLIVAN



What do we want to do?

- We believe video is going to revolutionize reporting and recording, in addition to entertainment
 - In addition to text, photo and music, we can now store all the video we ever watched on hard drives
 - $1\text{GB/day} \times 50 \text{ years} < 20 \text{ TB}$
 - In stead of telling the story, we can show them
 - In stead of studying history, we can watch it
 - But the video has to be panoramic

What does VR stand for?

Virtual Reality

What does VR stand for?

Visual Reality

Snap Went Public



“Snap Inc. operates as a camera company. It offers Snapchat, a camera application that helps people to communicate with short videos and images.”

Another quick test 😊

Who invented the telephone?

What was the first ever sentence in a telephone conversation?

What was the *second* ever sentence in a
telephone conversation? 😊

Visual + Reality

- We believe a visual centric world is upon us
 - Does not mean text and other formats are not important
 - They are good at conveying deep thoughts and nuances
 - But unbiased (conscientious or unconscious) panoramic is an important step towards better people to people connection and understanding the context and the full story
- By making the video 3D360, one has a better hope of seeing the reality and making up his/her own minds
- And it is a reality already, not science fiction

What do we want from you?

- Use this tools and together let's make it a better world
 - The Cultural Revolution in China, millions died, no record
 - The Rape of Nanking, 300,000 civilians perished, no record
 - It is not just technology or business, it is also personal
 - To document what we are contributing to the world while making sacrifices for our loved ones in a panoramic way
 - History and culture are quickly evolving, catch them!

The time for Visual Recording, Visual Reality, Virtual Reality is here!

