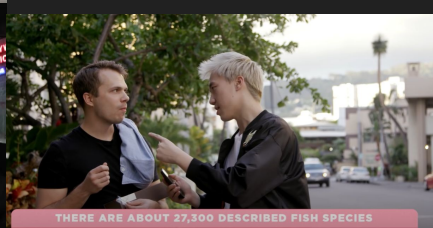


# Food Video Localization Midpoint Presentation

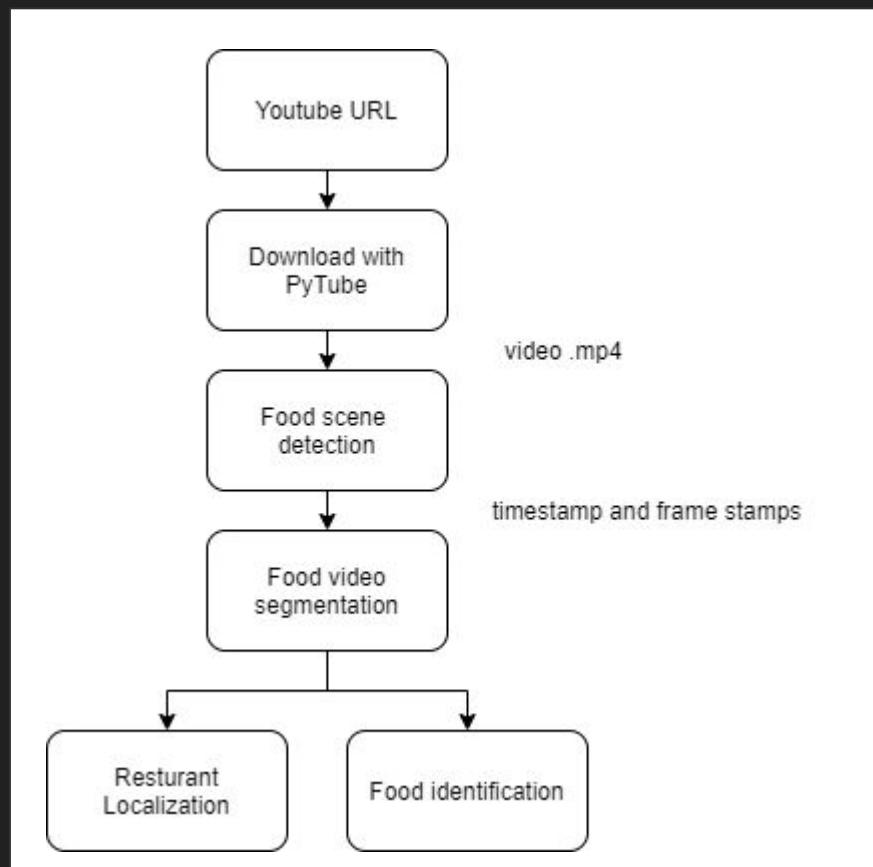
Jerry Yu

# Data

- BuzzFeed series “Worth It” from YouTube, ~70 videos
- Each video has 3 food area segments
- Mix of transition scenes and food scenes
- In each scene location, the hosts visit a restaurant and try a unique food



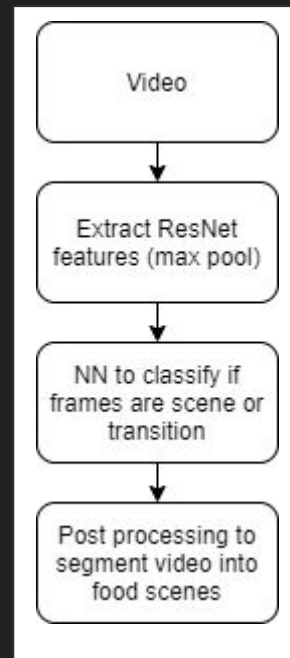
# Pipeline



# Food scene detection

- ResNet CNN features extracted for every 10th frame
- Training on 8 videos (15186 frames) and testing on 2 videos 2 videos (3602 frames) gave early results of 95% validation accuracy.
- Postprocessing to remove errors, left is predicted, right is ground truth

transition	transition
transition	transition
transition	transition
scene	transition
scene	transition
scene	transition
transition	transition
transition	transition
scene	transition
scene	transition
scene	transition
scene	transition
transition	transition
transition	transition
transition	transition



# Localization

- Finding and matching textual hints in the video (OCR, SRT transcriptions)
- Processing images before OCR
- Matching NER hints from text
- Weight locations that are mentioned multiple times



best bite of the day t Quito [Music] I'm Josiah Citrin the chef and owner of Malisse  
urant it's a contemporary American restaurant was French influences today I'm going t  
nspired by a style dish had in France the flavor just matched perfectly together the  
le yeah certainly should be did you know is gonna go into it you know crack it open t  
oche to stop it all up we you the farm-fresh egg from a biodynamic farm in Simi Valle  
ariety a grocery store egg to this I just think it's based on the diet the chicken as  
he egg is being seasoned inside the chicken inside the chicken so the first thing I'll  
he yolk from the white you know season the white I'll whip it put the whites in the m  
lk in put a little truffle oil little sea salt little black pepper cover that what's  
ust pop it in the oven for seven minutes and while that's in the oven I'll be reducin  
m stock and then I'll finish it with butter chives parsley shallots Dutch lemon that'  
auce which is truffle juice brown butter and cream it'll be a frost a foaming sauce h  
or in a day 20 to 40 a week people love this people love it it's very popular dish [M  
ng showered with truffle sure that's the dream yeah for me at least I love truffle I  
an't believe though that we've really gotten to this point where this is like almost  
so strong you got to be really careful you know when you're in chemistry lab and you  
you know Stephen actually used to be a chemist chemical engineer and I think that is  
buddy I'm monitoring your truffle it take do not hog very surprising that is the best  
e've got the cutest piece of toast in the world here like Johnny Bravo toast and eggs  
here you know when you make a half-court shot and you just have that immense feeling  
yo this is not your common chicken that the co came from mmm me and you we're to lay  
tastier why is that cuz I'm like a fatted calf you just eat I'm not working out but t  
made the most delicious meats are from animals that move around so that the fat can i  
d be more delicious than you how can you rock-climb I do many physical activities man  
the day probably the happiest I've been in an episode of were that ever I just love e  
it through a room like a fart well it's the best fart I've ever spelled and boy have

the day 13 20 DATE  
Josiah Citrin 41 54 PERSON  
Malisse 77 84 ORG  
Santa Monica 99 111 GPE  
Malisse 114 121 ORG  
American 153 161 NORP  
French 177 183 NORP  
France 285 291 GPE  
Simi Valley 583 594 LOC  
two 870 873 CARDINAL  
seven minutes 1170 1183 TIME  
Dutch 1338 1343 NORP  
a week or in a day 1518 1536 DATE  
20 to 40 1537 1545 CARDINAL  
Stephen 2042 2049 PERSON  
Johnny Bravo 2344 2356 PERSON  
half 2443 2447 CARDINAL  
mmm 2598 2601 PERSON  
Steven 3018 3024 PERSON  
Steven 3035 3041 PERSON  
the day 3051 3058 DATE

# Food item identification

- Finding and matching textual hints in the video (OCR, SRT transcriptions)
- Using visual hints from object detectors / imagenet resnet predictions
- Identifying food terms from text (egg, tea, oolong)



best bite of the day t Quito [Music] I'm Josiah Citrin the chef and owner of Malisse restaurant in Santa Monica a Malisse restaurant it's a contemporary American restaurant was French influences today I'm going to be preparing a truffled egg dish I was inspired by a style dish had in France the flavor just matched perfectly together the egg really absorbs the flavor of the truffle yeah certainly should be did you know is gonna go into it you know crack it open the yolk is gonna run out and they have brioches to stop it all up we you the farm-fresh egg from a biodynamic farm in Simi Valley what's the difference from your ardent variety a grocery store egg to this I just think it's based on the diet the chicken as they move it around the farm all day so the egg is being seasoned inside the chicken inside the chicken so the first thing I'll do is I'll crack the two eggs separate the yolk from the white you know season the white I'll whip it put the whites in the mold indentation a dimple to put the egg yolk in put a little truffle oil little sea salt little black pepper cover that what's the rest of the egg whites you know I'll just pop it in the oven for seven minutes and while that's in the oven I'll be reducing some chicken stock truffle juice mushroom stock and then I'll finish it with butter chives parsley shallots Dutch lemon that'll be the sauce and then while the other sauce which is truffle juice brown butter and cream it'll be a frost a foaming sauce how many truffle eggs do you sell in a week or in a day 20 to 40 a week people love this people love it it's very popular dish [Music] can I just say this is the dream being showered with truffle sure that's the dream yeah for me at least I love truffle I don't like what this shows done to you I can't believe though that we've really gotten to this point where this is like almost normal fluffy white perfect egg it smells so strong you got to be really careful you know when you're in chemistry lab and you waft you don't want a chloroform yourself you know Stephen actually used to be a chemist chemical engineer and I think that is the most interesting thing about what - Oh buddy I'm monitoring your truffle it take do not hog very surprising that is the best way to eat truffle and check this out we've got the cutest piece of toast in the world here like Johnny Bravo toast and eggs toast egg you gotta get truffle in there here you know when you make a half-court shot and you just have that immense feeling of joy looks like there's a very flavorful yo this is not your common chicken that the co came from mmm me and you we're to lay eggs things that I would lay would be way tastier why is that cuz I'm like a fatted calf you just eat I'm not working out but that's not how the most delicious meats are made the most delicious meats are from animals that move around so that the fat can integrate with the muscle that's why I would be more delicious than you how can you rock-climb I do many physical activities many eyeball Steven ball hard Steven stock on the day probably the happiest I've been in an episode of were that ever I just love eggs truffle has like the ability to spread it through a room like a fart well it's the best fart I've ever spelled and boy have I smelled some farts [Music] Wow

# Metrics

- Scene detection - difference in number of minutes between identified scene / actual scene
- Localization - F1 score
- Food identification - BLEU score between predicted food and actual food