

Team Kieffer

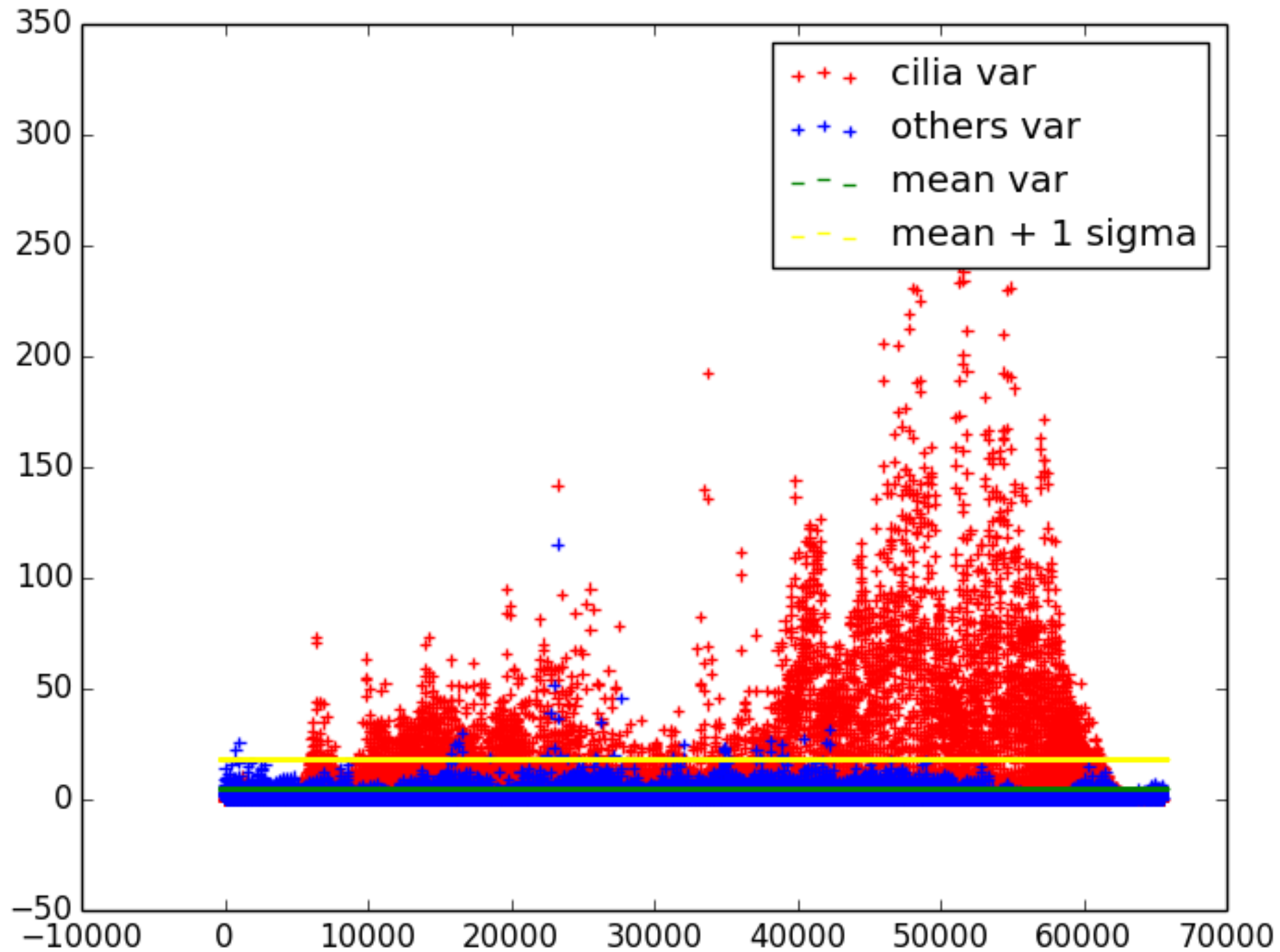
Narinder Singh Mohammadreza Iman Haixing Dai

Variance Thresholding

Let's say you have a single pixel: over the 100 frames, this pixel's intensity fluctuates (a time series). Let's call the *variance* in that fluctuation σ_i at pixel \vec{x}_i . Now I calculate that same variance at every pixel, giving me $\sigma_1, \sigma_2, \dots, \sigma_i, \dots, \sigma_n$ for n pixels in a video. If I throw out every pixel that has a $\sigma_i < t$ for some threshold t (usually a function of the σ_i 's), I'm left with all the pixels that should a fluctuation variance larger than that threshold... and therefore, plausibly, moving.

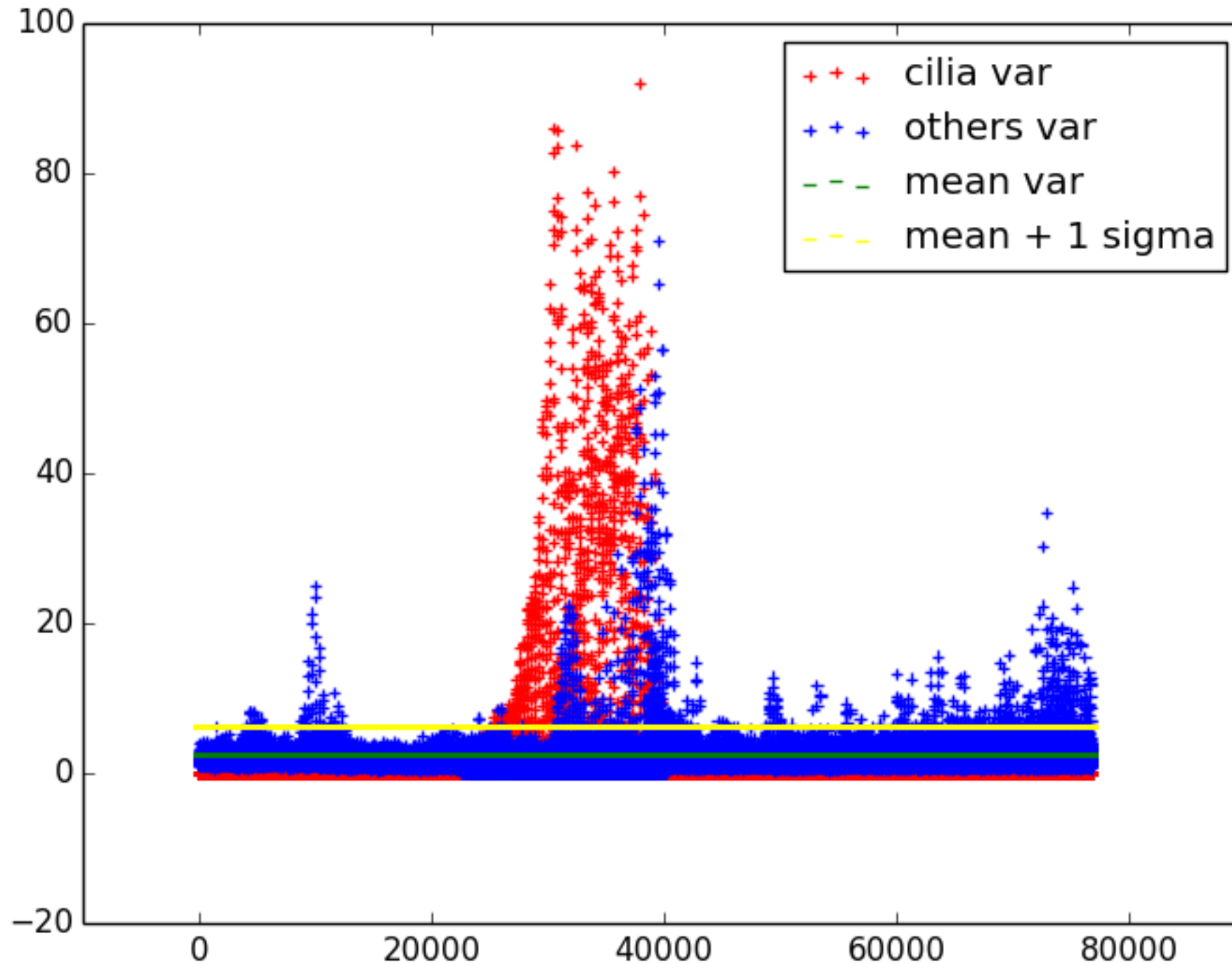
Variance Scatter

The Good



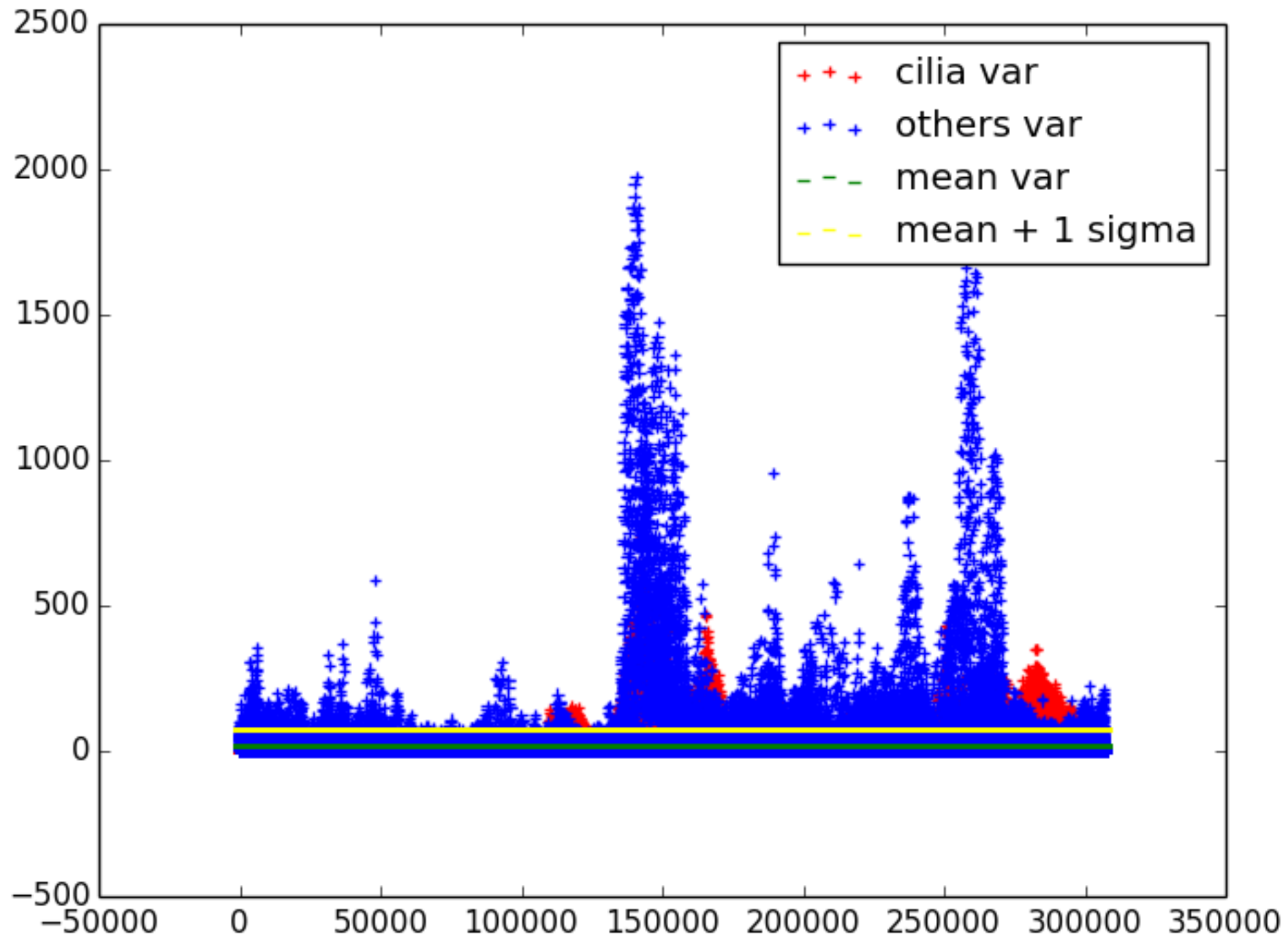
Variance Scatter

The Bad



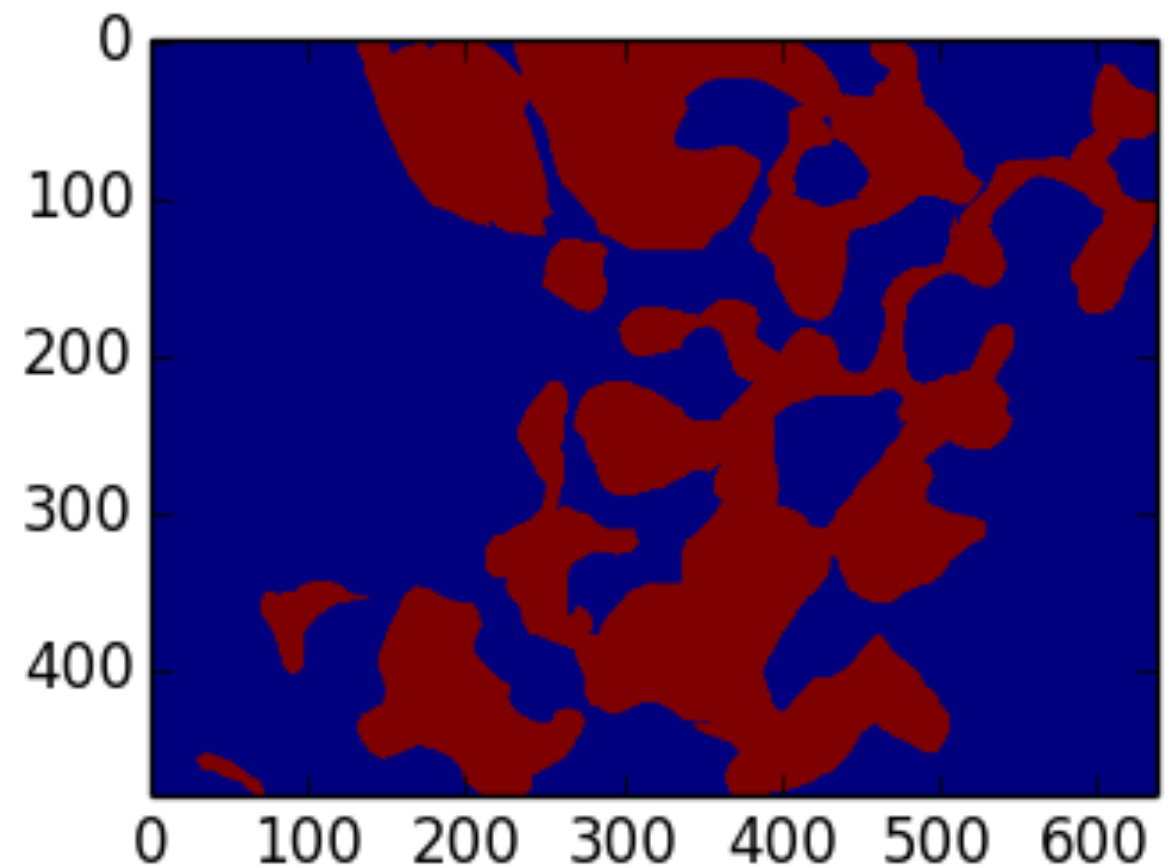
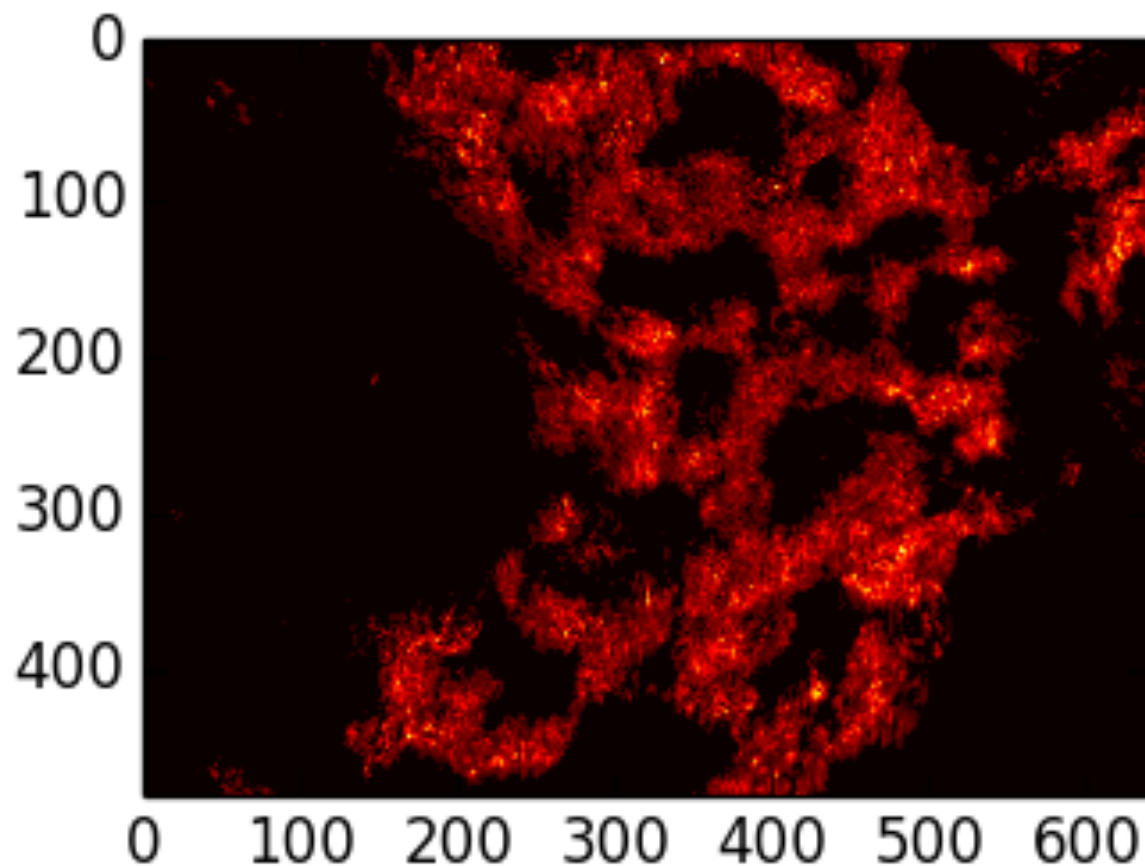
Variance Scatter

The Ugly



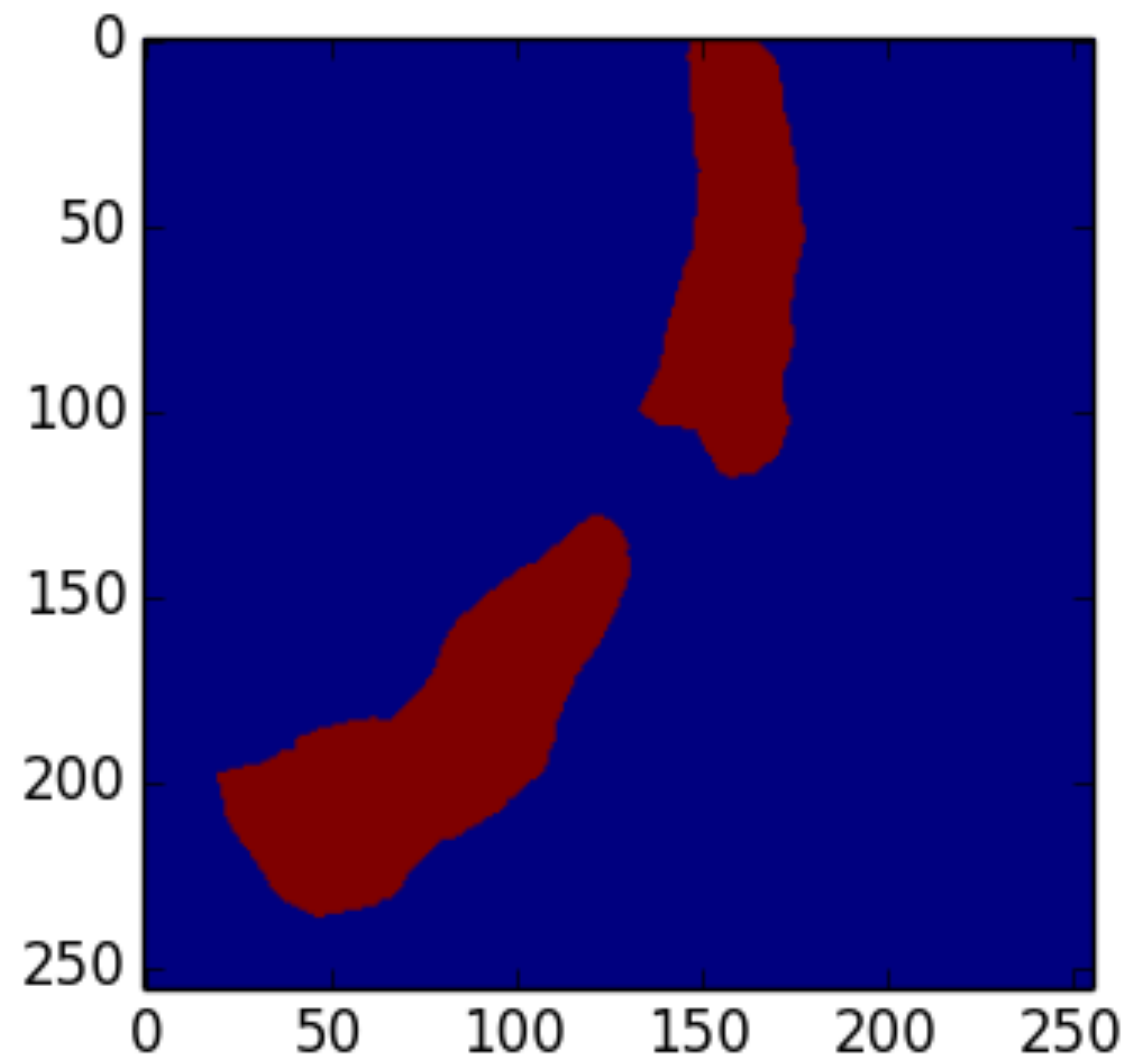
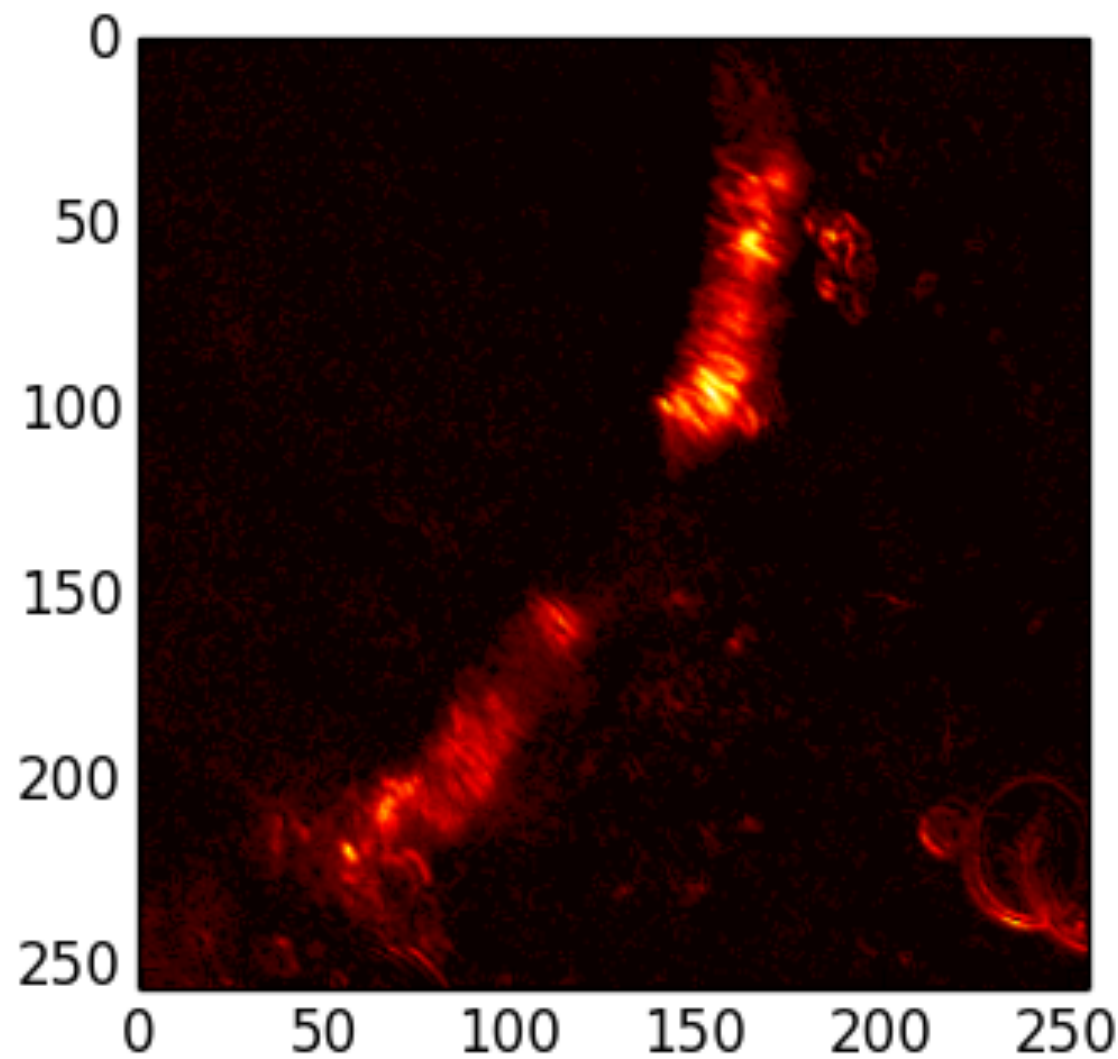
Heat-map vs Mask

The Good



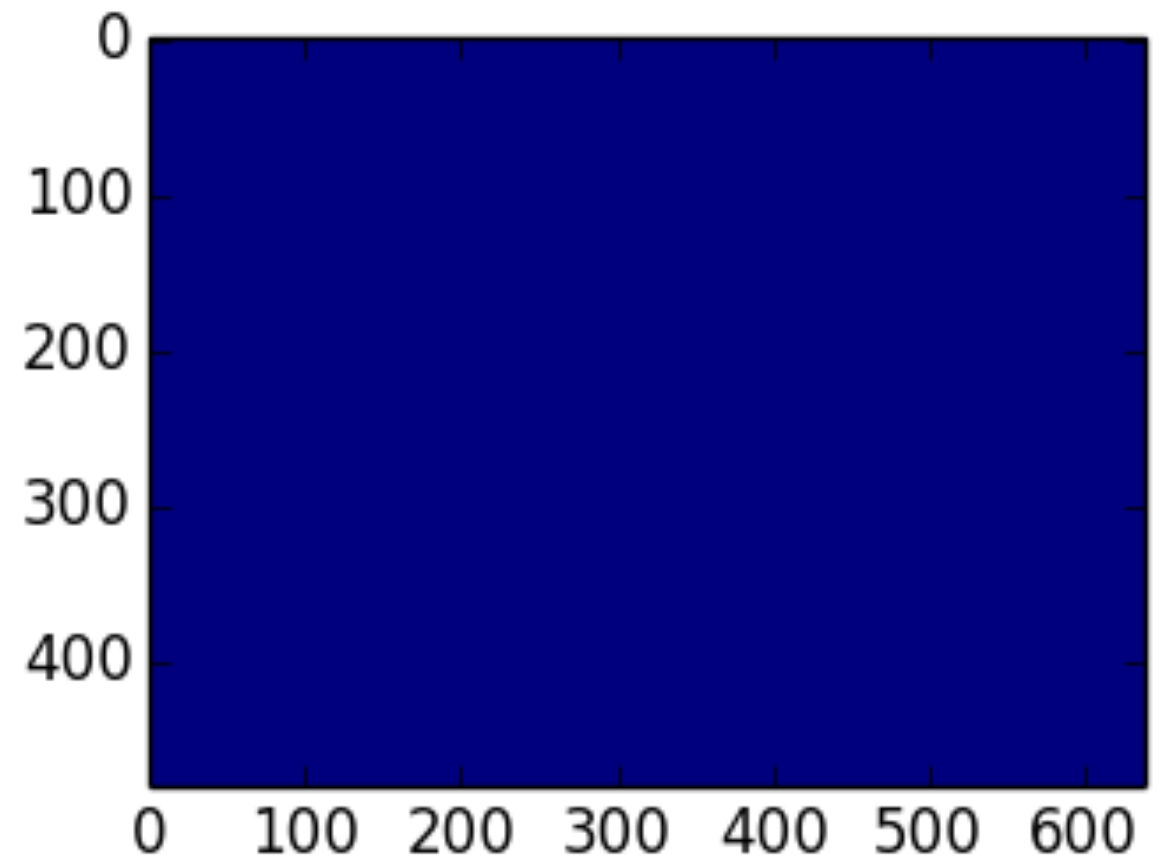
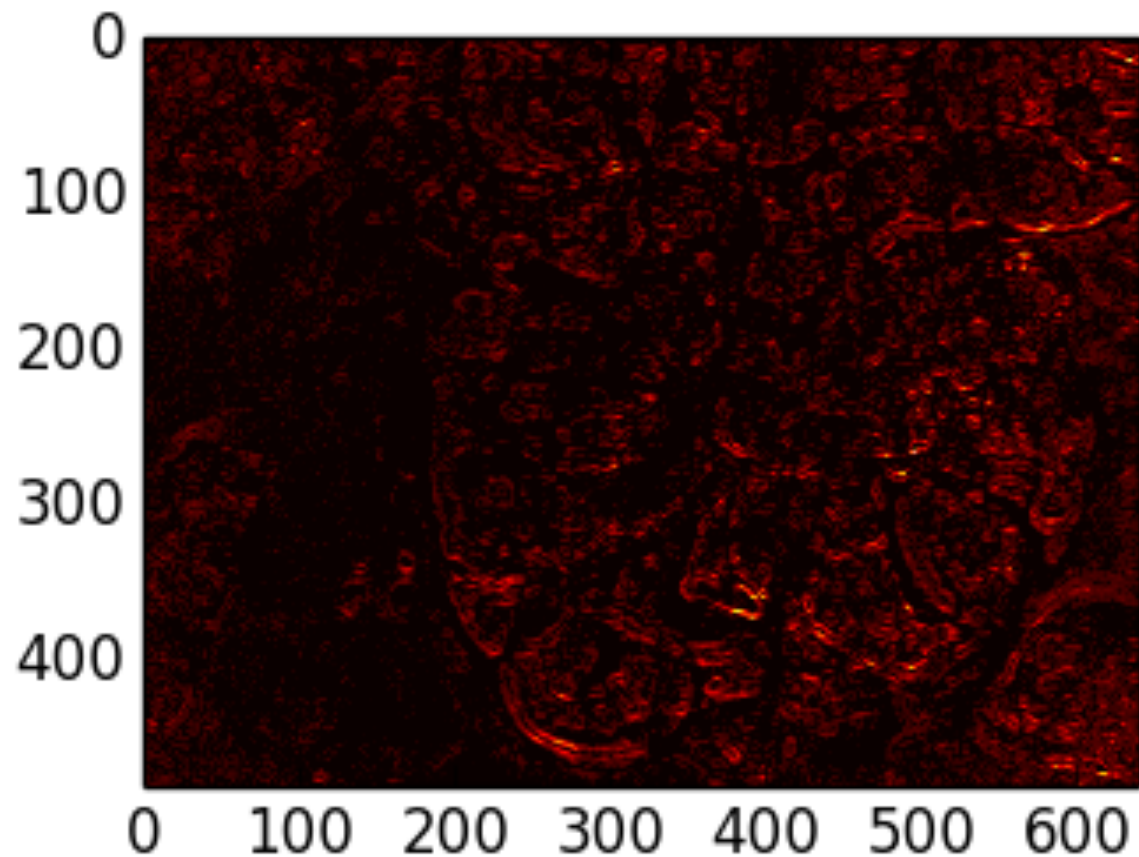
Heat-map vs Mask

The Bad



Heat-map vs Mask

The Ugly

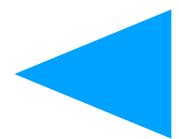


Results

Threshold: Mean

Accuracy: 23.4%

RANK	NICKNAME	VERSION	TIME	MEAN IOU
1	Team linden	19	2019-03-04 21:12:21	40.02089
2	Team Cragg	34	2019-03-05 22:13:23	36.77917
3	Team Taylor	17	2019-03-04 17:24:43	34.39957
4	Team Hasay	36	2019-03-05 11:53:19	31.91838
5	Team Thweatt	30	2019-03-05 00:46:20	27.61074
6	Team Kieffer	6	2019-03-04 19:07:25	23.47264
7	Team Hall	40	2019-03-05 19:28:38	21.23767
8	Team Bruce	25	2019-03-05 21:42:18	17.54687



Unet

Testing Accuracy: 49.75%

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2019-03-06 00:33:56,283 Iter 484, Minibatch Loss= 0.6955, Training Accuracy= 0.49
28, Minibatch error= 50.7%
2019-03-06 00:34:03,429 Iter 486, Minibatch Loss= 0.6926, Training Accuracy= 0.52
62, Minibatch error= 47.4%
2019-03-06 00:34:10,592 Iter 488, Minibatch Loss= 0.6937, Training Accuracy= 0.48
15, Minibatch error= 51.8%
2019-03-06 00:34:13,834 Epoch 48, Average loss: 0.6932, learning rate: 0.0010
2019-03-06 00:34:17,493 Verification error= 49.8%, loss= 0.6919
2019-03-06 00:34:23,621 Iter 490, Minibatch Loss= 0.6920, Training Accuracy= 0.43
10, Minibatch error= 56.9%
2019-03-06 00:34:30,797 Iter 492, Minibatch Loss= 0.6936, Training Accuracy= 0.49
95, Minibatch error= 50.1%
2019-03-06 00:34:37,954 Iter 494, Minibatch Loss= 0.6940, Training Accuracy= 0.39
69, Minibatch error= 60.3%
2019-03-06 00:34:45,133 Iter 496, Minibatch Loss= 0.6931, Training Accuracy= 0.30
49, Minibatch error= 69.5%
2019-03-06 00:34:52,357 Iter 498, Minibatch Loss= 0.6930, Training Accuracy= 0.35
86, Minibatch error= 64.1%
2019-03-06 00:34:55,654 Epoch 49, Average loss: 0.6923, learning rate: 0.0010
2019-03-06 00:34:59,385 Verification error= 49.8%, loss= 0.6919
2019-03-06 00:35:01,630 Optimization Finished!
/tf_unet/output/run_000/model.ckpt
2019-03-06 00:35:02,941 Restoring parameters from /home/mohammadreza_im/project2/
unet-ggg/tf_unet/output/run_000/model.ckpt
2019-03-06 00:35:03,835 Model restored from file: /home/mohammadreza_im/project2/
unet-ggg/tf_unet/output/run_000/model.ckpt
Testing error rate: 49.75%
```

The End

Thnaks!