

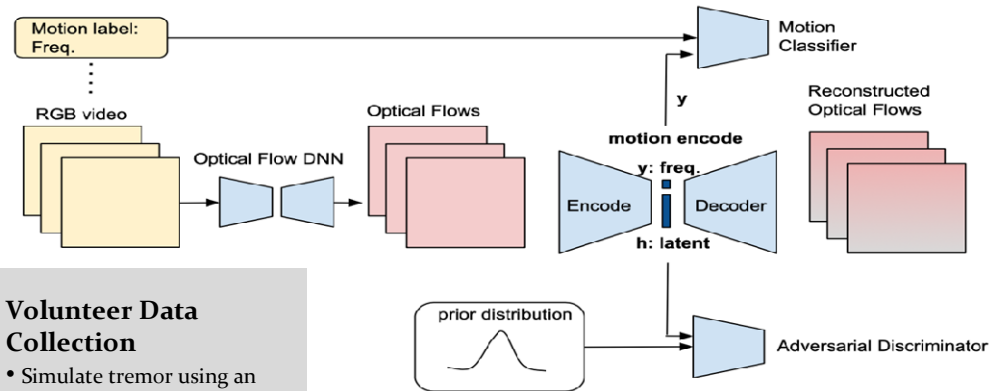
Estimation of Clinical Tremor using ST-AAE

Li Zhang*, Vidya Koesmahargyo, and Isaac Galatzer-Levy**

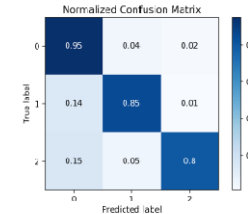
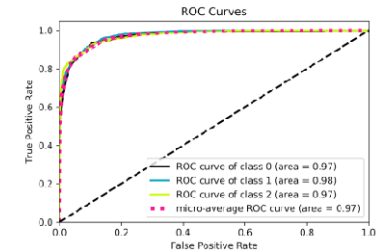
AiCure, New York

* Currently at Coveral Health, ** currently at facebook

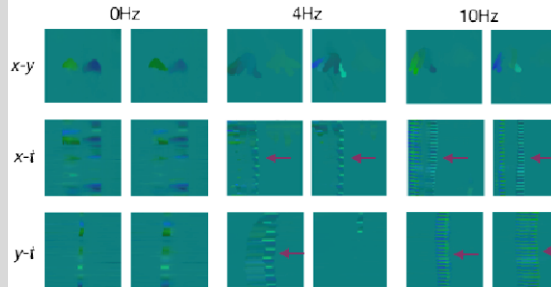
Spatio-Temporal Adversarial AutoEncoder (ST-AAE)



Cross-Validation on Volunteer Data

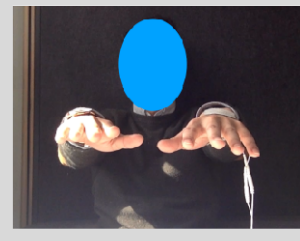


Optical Flows at Different Frequencies

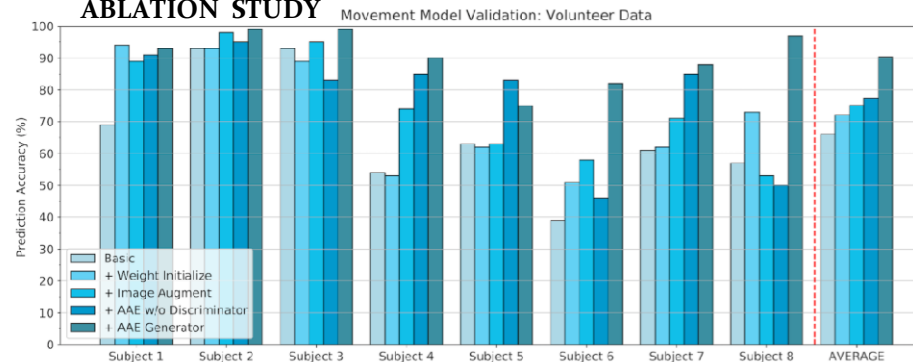


Volunteer Data Collection

- Simulate tremor using an electronic pulse massager
- 0 Hz, 4 Hz, and 10 Hz
- 3068 segments of 53 videos from 28 subjects



ABLATION STUDY



Clinical Data

- 33 clinical videos from 9 essential tremor patients
- Clinical videos were coupled with clinical TETRAS scores, from in-person and video-review

Hand	0	1	1.5	2	2.5	3	3.5	4
R-forward	none	barely visible	<1 cm	1- <3 cm	3- <5 cm	5- <10 cm	10-20 cm	>20 cm
L-forward	none	barely visible	<1 cm	1- <3 cm	3- <5 cm	5- <10 cm	10-20 cm	>20 cm

