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Supported Projects: ESGF, CASC postdoc

Quarterly Report for Jan 1, 2018 – Mar 31, 2018

Quarter Accomplishments:

- **Machine Learning**
 - Performed trouble shooting process for previous models regarding following issues:
 - Multiple trajectories tracking with naïve CNN embedding fails
 - In multiple detection in one image setting, the given model fails to distinguish different objects - all prediction points collected at the center of multiple objects
 - Soft attention mechanism leads error stacking up in testing phase, so making early failure evolve to the wrong trajectory
 - After conducting long trouble shooting process, the conclusion made that FC-LSTM is not enough to capture the spatial pattern in 2D imaged input.
 - As the solution, we decided to change model from CNN+FC-LSTM to ConvLSTM
- **Conference Attendance**
 - Mar 26 – 29, 2018: GTC AI conference

Next Quarter's Roadmap

- Convert current model to ConvLSTM based model to capture spatial pattern in image
- Targeting to full paper publication for CIKM 2018 (Deadline is May. 22 2018)
- Keep working on collaborated project with NERSC LBNL
- May initialize collaboration with KISTI in Korea