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NOAA FISHERIES

National Marine Fisheries Service
Alaska Fisheries Science Center

2021 AFSC Seminar Series

Suzanne Romain, AFSC FMA EM Innovation Team

Tuesday, March 16 @ 10 am Pacific

Development of EM Computer Vision Systems and Machine Learning Algorithms for Automated Catch Accounting in Alaska Fisheries: An overview of the FMA innovation project

Successful fisheries management is dependent upon the collection of data from fishing activities. Electronic monitoring (EM) has been shown to be an effective tool to meet fisheries monitoring objectives in compliance-based programs. The EM Innovation (EMI) project, supported by the Fisheries Monitoring and Analysis Division (FMA), is researching and piloting cost-effective and durable machine vision (MV) advancements for EM camera system deployments, with the goal of providing real time automated catch accounting reporting.

EMI research consists of the development and deployment of camera systems for acquiring imagery and the development and integration of automated MV algorithms. Algorithms have different requirements based on the image types and the fisheries environment, and multiple functional applications where the algorithms can be useful were identified. These include automated species detection, identification & length estimation of fish as it is caught at the rail of fixed gear vessels; species identification of fish images collected in controlled environments; the detection, count and length estimation of Halibut bycatch; and the isolation, detection and count of salmon from processing plant belts containing multiple species of fish, as well as the detection and monitoring of crew member activity on vessel decks.

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