Connecting The Dots 2018

Tuesday 20 March 2018 - Thursday 22 March 2018

University of Washington Seattle

Scientific Programme

1: Algorithms and theoretical analysis

Mathematical evaluation of pattern recognition problems, fitting tracks beyond classical Kalman filters, effect of noise, etc.

2: Real-time pattern recognition and fast tracking

Software and firmware implementation for parallel and discrete pattern recognition, e.g. Hough transform approaches, look-up tables, associative memory, etc. Timing performance for fast tracking or on-line trigger system.

3: Machine learning approaches

Novel tracking concepts, software and firmware implementations, exploration of neuromorphic hardware

4: Performance evaluation

Examples of implemented pattern recognition problems and solutions with emphasis on new challenges and limits of scaling existing approaches

5: Advanced usage of tracks

Advanced algorithms to build high level information from tracks, e.g. conversion, vertexing, jets, tau and flavor tagging

6: Beyond the conventional tracking

4D tracking using precision timing information, software techniques for novel detector concepts and interdiciplinary developments in the field of data science, e.g. neuro inspired computing, Brain activity, connectivity