

## **An Introduction to Multiple Object Tracking**

### **Hour 1: Foundations of M.O.T**

#### **Topic 1: Introduction to Multiple Object Tracking (20 minutes)**

Definition and significance of M.O.T in cognitive science

Historical overview: Pylyshyn and Storm's foundational research

Key cognitive processes: attention, memory, and visual perception

#### **Topic 2: Cognitive Processes and Neuroscience of M.O.T (40 minutes)**

Cognitive Processes:

Working memory and attention types (divided, selective, and sustained)

Visual perception and spatial awareness

Neuroscience:

Role of parietal, frontal, and occipital cortices

Insights from fMRI and EEG studies

### **Hour 2: Applications and Training Tools**

#### **Topic 3: Real-World Applications of M.O.T (30 minutes)**

Sports performance: Enhancing situational awareness and decision-making

Gaming and eSports: Tracking and multitasking improvements

Military and aviation: Monitoring dynamic environments

#### **Topic 4: Training Tools and Limitations of M.O.T (30 minutes)**

Overview of tools like NeuroTracker, CogniFit, and BrainHQ

Role of VR and AR in advancing training methods

Limitations of M.O.T research: ecological validity and real-world transferability