A Context-Aware Selective Sensor Fusion Method For Multi-Sensory Computing Systems

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BRIEF DESCRIPTION

HydraFusion is a modular, selective sensor fusion framework designed to enhance performance and efficiency in multi-sensory computing systems across diverse contexts.

FULL DESCRIPTION

HydraFusion represents a breakthrough in sensor fusion technology, offering a dynamic approach to combining data from multiple sensors to improve system performance and efficiency without compromising robustness. By intelligently adjusting between early, late, and intermediate fusion based on the context, HydraFusion optimizes perception in applications ranging from autonomous vehicles to wearable health sensors. Its multi-branch architecture, incorporating context into branch selection, sets a new standard for sensor fusion methods in terms of adaptability, energy efficiency, and overall effectiveness.

SUGGESTED USES

» Autonomous vehicle perception systems for improved navigation and safety in diverse driving conditions.

» Wearable health sensors for accurate and energy-efficient stress and emotion classification.

» Internet of Things (IoT) and smart home devices requiring efficient and robust sensor data processing.

» Industrial control systems and robotics that benefit from enhanced perception and decision-making capabilities.

» Embedded systems and cyber-physical systems (CPS) where energy efficiency and performance are critical.

ADVANTAGES

» Dynamically switches between fusion methods to maximize performance and efficiency across diverse contexts.

» Outperforms existing sensor fusion methods in challenging real-world scenarios, including bad weather and poor lighting conditions.

» Utilizes contextual information to adapt the fusion method dynamically, reducing energy consumption without affecting performance.

» Supports a wide range of applications and tasks, demonstrating significant benefits over state-of-the-art methods in autonomous vehicle perception and wearable health sensing.

PATENT STATUS

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OTHER INFORMATION

CATEGORIZED AS

» **Computer**
  » Software
» **Sensors & Instrumentation**
  » Medical
  » Position sensors
» **Transportation**
  » Automotive

RELATED CASES

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Country	Type	Number	Dated	Case
United States Of America	Published Application	20240062519	02/22/2024	2022-966

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