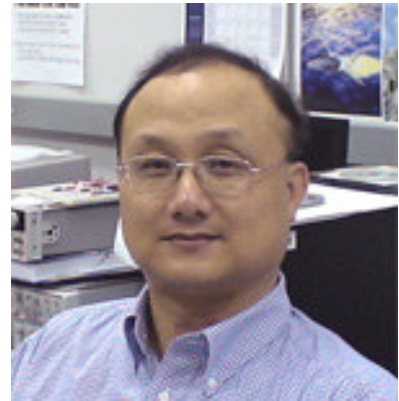


## **DEVELOPMENT OF GESTURED BASED REMOTE CONTROLLER – RESEARCH COMMERCIALIZATION**

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LECTURE: 10:00 AM – 12:00 PM**

**ENGINEERING CENTER  
ROOM EC 1107  
10555 WEST FLAGLER STREET  
MIAMI, FL 33174**



### **Abstract**

The gesture-based technology is currently an evolving trend that allows users to control various electronic devices using the hand gestures. In this talk, we present a vision-based approach to recognize the gesture (static images) using the gradient orientation for smart appliances or set-top-box remote controllers. For a given image, the algorithm evaluates the occurrences of gradient orientation in localized regions. It is computed on a dense grid of uniformly spaced cells and uses overlapping local contrast normalization for improved accuracy. In addition, Combinational Neural Networks are used to represent the complex input-output relationships for gesture recognition. The employment of VHDL on the Field Programmable Gate Array (FPGA) enables operations to be performed in parallel, thus improves the recognition speed. The goal is to design the architecture of vision-based remote controllers for gesture recognition using FPGA platform. The design can then be ported and migrated into Very Large Scale Integration (VLSI) chips for mass production for the purpose of research commercialization.

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