

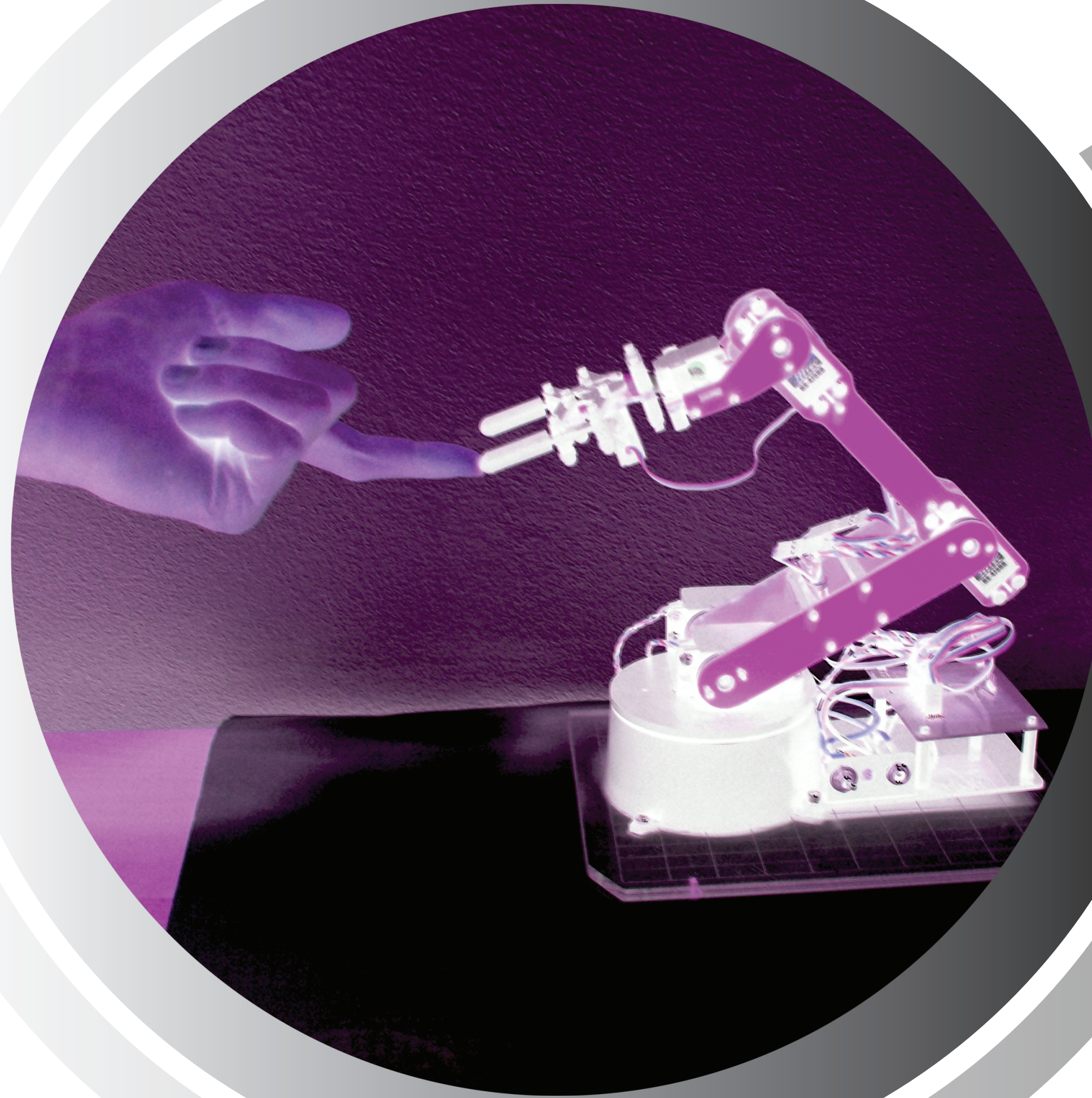
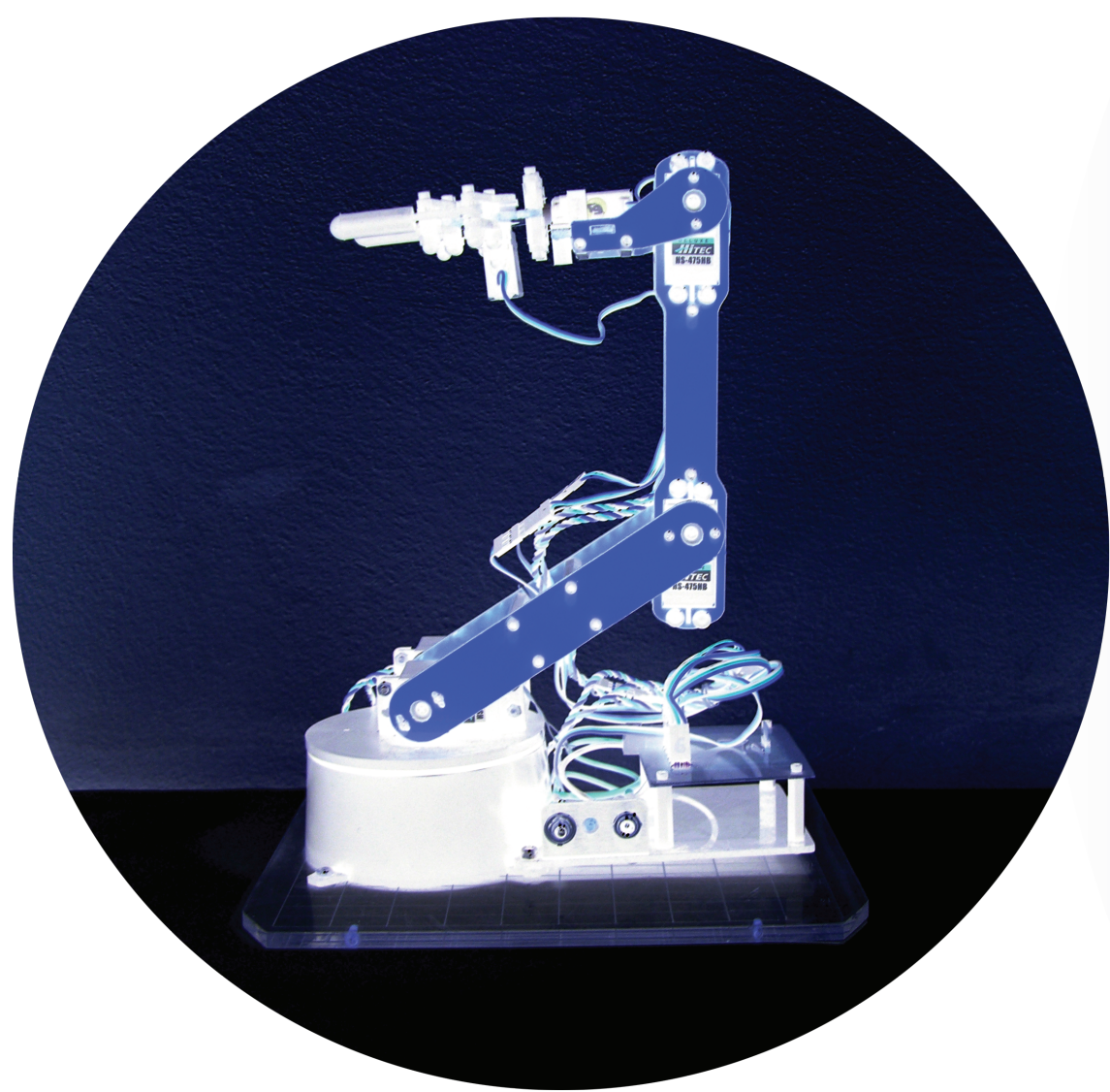


SENSORY SYSTEM FOR THE CONTROL OF ROBOTIC ARM MOVEMENT

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THESIS GOAL:

DESIGN AND BUILD SYSTEM OF SENSORS, THAT WILL MAP POSITION OF USER'S ARM PARTS AND FINGERS. DATA WILL BE PRESENTED IN FORM OF ROBOTIC ARM MOVEMENT AND DISPLAYED IN BRIEF WAY ON COMPUTER.

MOTIVATION:

SIMPLIFY USAGE OF ROBOTIC SYSTEMS
HELP USER TO MAKE WORK: EASIER, FUNNIER, PRECISE, MORE SAFE
MAKE SYSTEM ACCESSIBLE FOR WIDE RANGE OF USERS
MAKE LOW-COST SYSTEM
DO NOT LIMIT USER IN MOVEMENT

USED TECHNOLOGY:

MOVEMENT SENSING - ARM PARTS AND CHEST: 4x GYROSCOPE, FINGERS: 5x FLEXIBLE SENSOR

DATA PRESENTATION - RAW DATA: MFC TECHNOLOGY, 3D MODEL: OPEN GL

DATA TRANSFER - WIRELESS: BLUETOOTH, COMPUTER: USB AS HID DEVICE

FINAL SYSTEM:

- 1. SENSING MODULE:** LOCATED ON USER'S ARM + COLLECT AND PRE-PROCESS DATA FROM SENSORS + TRANSFER DATA TO DRIVE MODULE
- 2. DRIVE MODULE:** LOCATED NEAR ROBOTIC SYSTEM + PROCESS DATA FROM SENSING MODULE + DRIVE MOVEMENT OF ROBOTIC ARM + TRANSFER DATA TO COMPUTER
- 3. COMPUTER:** DISPLAY DATA AND MODEL

ALTERNATIVE USAGE:

CONTROL COMPUTER
CONTROL MOBILE PHONE
COMPUTER GAME CONTROLLER
ANIMATION CAPTURING