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[Interdisciplinary] Taiwan Researchers Develop "Silicon Brain" Smart Chip

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CNA - Focus Taiwan (2011/11/24) Taiwan researchers have developed a smart chip for computer recognition purposes that mimics certain functions of the human brain, the team leader said Thursday.

The smart recognition chip is the first in the world to incorporate neuroscience into chip technology, said the project director, Liang-gee CHEN of National Taiwan University's (NTU's) College of Electronic Engineering. Its functions include facial recognition and learning ability, he said.

CHEN said the Taiwan researchers on the neocortical computing project ambitiously tried to replicate some of the functions of the neocortex, the largest and most evolved section of the human brain that governs sensory perception, motor commands, spatial reasoning, conscious thought and language. Computers have strong calculating abilities, but are fairly weak when it comes to recognition, CHEN noted. The objective was therefore to design a "silicon brain" to address this shortcoming and thus give computers important recording functions similar to the brain, CHEN explained. It took five years to develop the chip, drawing on the expertise of researchers in the fields of psychology, ophthalmology, and neuroscience, he said. In another five to 10 years, it could be embedded onto eyeglasses, watches and other devices to help people identify each other by name and occupation, he envisioned. It would be almost like having a personal secretary with someone, CHEN said.

The Taiwan research team beat competitors from the United States and Europe in unveiling the technology, CHEN said. The research paper on the project will be among nine Taiwan papers selected for presentation at the renowned IEEE International Solid-State Circuits Conference in San Francisco next February.

Reference:
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