Research and Development
for Energy Management System using AI chip

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Aizu Computer Science Laboratories, Inc.

Aizu
Computer Science
Laboratories

Company Overview

Company Name	Aizu Computer Science Laboratories, Inc.
Date of Establishment	Apr. 1, 2019
Head Office	1-77 Higashi-Sakaemachi, Aizuwakamatsu 965-0872, Japan
TEL / FAX	+81-242-93-8380 / +81-242-93-8381
Common Stock	20,000,000 JPY　(As of Dec. 2019)
Major Business Area	R&D in computer science field (AI, Blockchain)
Representative	Masayuki Hisada, Dr. Sc.
Shareholder	Masayuki Hisada　(86%)

Director & CEO：M. Hisada, Dr. Sc.

Our company was established in Apr. 2019, specialized for **research and development** in advanced **computer science** fields.

Our company has strong **relationship with the University of Aizu**.

The university was established in 1993, as the **first university in Japan solely dedicated to computer science and engineering**.

We are looking for

Partner for our research and development

Investors interested in tech company specialized **AI** and **Blockchain** technologies

Energy related service provider interested in using **AI** and **Blockchain** technologies

Major Research Area

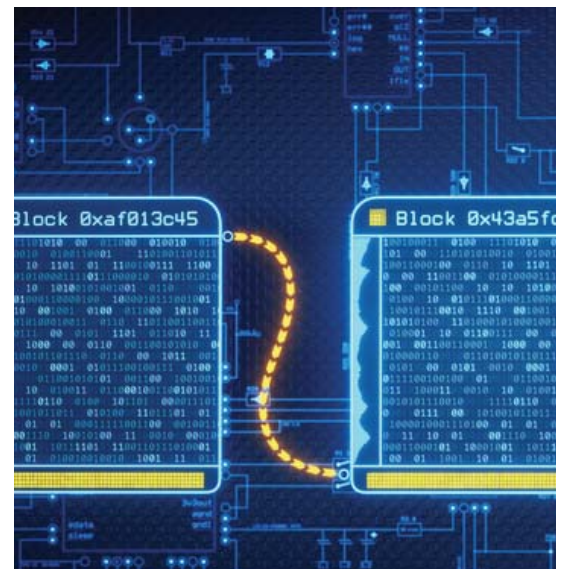# AI   x   Blockchain

**Researchers
AI x 4
Blockchain x 2**

Researchers are mainly invited from graduate school of the university of Aizu

Edge Computing: IoT and AI

Manufacturing	Logistics	Medical	Financial

Shifting from Cloud to Edge

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AI Chip
Global Activities

Qualcomm

5G AI chip

aws
Inferentia
Low latency, cost effective

(intel)
FPGA
AI Chip

Google
Edge TPU
Inference on Edge

Apple
A13 Bionic
Neural Engine

NVIDIA.
GPU Processing
GPU Board

Tesla
Autonomous Driving

IBM
Custom Chip for ML

ARM
Arm AI/ML

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AI CHIP

Collaboration with UoA

Prof. Abderazek Ben Abdallah, Ph.D.
Adaptive Systems Laboratory
The University of Aizu

1 **High Performance**
Prediction on Edge

2 **Low Power Consumption**
Hardware spends less energy

3 **Multiple Neural Network (M-NN)**
Combination of Neural Network with Network on Chip technology

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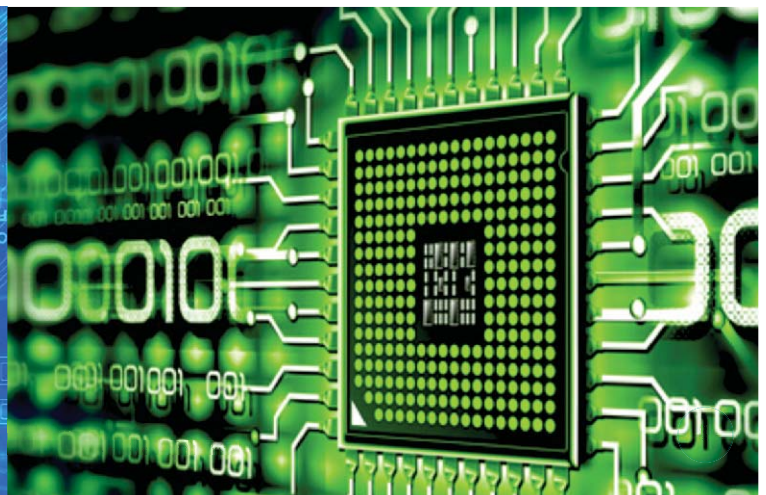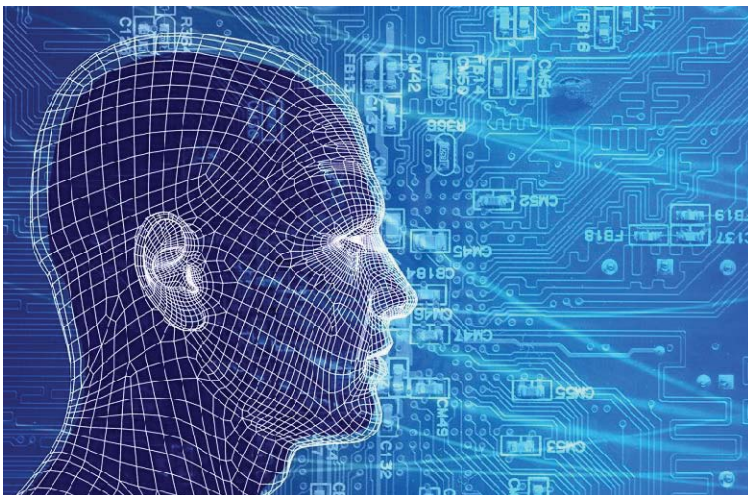
Main Point of View
AIC x NoC

Complicated Problem

Flexible combination of multiple Neural Network

Low Power Consumption

Optimized custom chip consume very low energy

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AIaaS (AI as a Service)

This system **does not require any knowledge** of statistics or machine learning.

You just simply upload dataset, you can use its training result on your **edge computers**.

Training Data

Cloud

Re-Training

Using on the Edge
【Prediction on Computer】

Training Result

Using on the Edge
【AI chip for IoT】

Re-Training
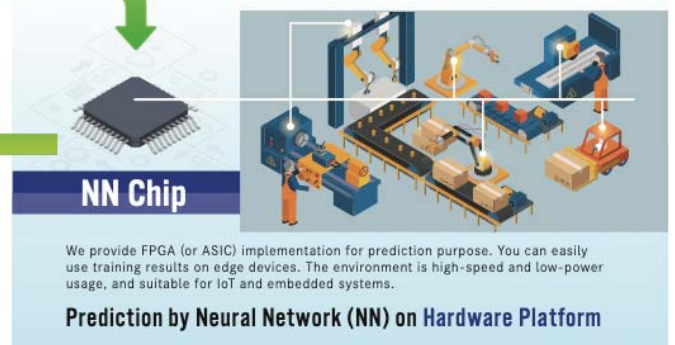
Training — Validation — Re-Training

Prediction by Neural Network (NN) on Software Platform

We will provide client framework written in Python language, you can easily access training results, re-use it for prediction purposes in any operating system supporting Python language.

Software NN

NN Chip

We provide FPGA (or ASIC) implementation for prediction purpose. You can easily use training results on edge devices. The environment is high-speed and low-power usage, and suitable for IoT and embedded systems.

Prediction by Neural Network (NN) on Hardware Platform

Our R&D Activities (in Fukushima)

AI chip and its use case in EMS: Energy Management System

This project is partially supported by the funding from Fukushima prefecture

EV x EMS

We have two business fields:
• Share-Car business
• EMS by EV

This project is collaborate with REXEV (renewable energy x EV) corp.

Weather forecasting, energy demand, EV SoC etc. consider complicated combination of predictions and inferences by AI (Neural Network).

Our implementation is hybrid with software and hardware (AI chip).

to Advance Knowledge for Humanity

Starting from Fukushima Prefecture!