



Fixstars @ a glance

Fixstars Solutions Inc.

About Fixstars



Fixstars Corporation

Founded

Aug. 2002

Employees

253 (as of Sep. 2020)

Location

Tokyo (Corporate HQ) , Yokohama

Corporate CEO

Satoshi Miki

Affiliates

Fixstars Solutions, Inc. (California company)

Fixstars Autonomous Technologies, Inc. (Software for Autonomous Vehicle)

Sider Corporation (AI-based Software Development Management Service)

Smart Opinion (AI-based Breast Cancer Analysis)

Oscar Technology Corporation (Automatic Parallelization Compiler)

Clients

Toshiba Corp., Canon Corp., Hitachi, Ltd., Hitachi High Technologies Corp., Olympus Corp., Mizuho Securities, RIKEN, AIST, Fujitsu Lab etc.

Software
Optimization Service



ADAS



Our Main Business: Optimization Service

Clients' Software

Their Key Technologies

Image
Processing

Image
Recognition

Numerical
Computation

Signal
Processing

Mathematical
Engineering

Machine
Learning

Real-time Control System

Deep Neural
Network

Storage FW

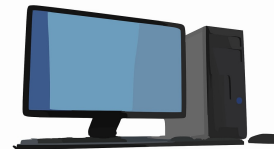


Optimizing their SW for the target platform

Clusters



PCs



Embedded Boards



SoC



CPU

GPU

FPGA

The Other Special HW

Our Expertise

Downsizing and developing
an algorithm

Parallelization techniques

HW/domain specific knowledge

apply

Our Target Industry

We contribute to and speed up our clients' business by optimizing their software operations in these industries facing information explosion.

Image Processing



4K/8K
High-speed cameras

Medical/Bio



Genome analysis
High resolution
MRI/CT

Mobile



Smartphones
Tablets

Automobile



ADAS

Factory Automation



Inspection System
Industry 4.0

Big Data



IoT data collection
Machine learning

Financial



Option pricing
Risk analysis

Case Study: ExSeq Processing

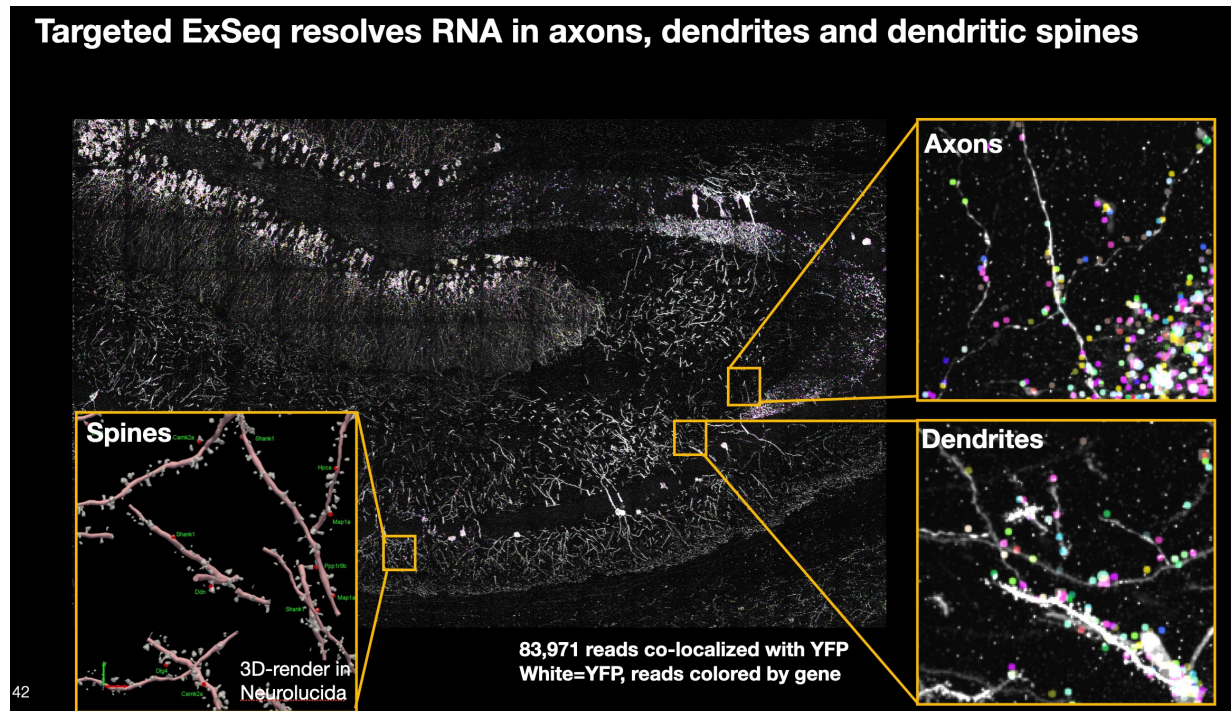
published on 1/29 in Science

→ Project summary

- ExSeq is a method of detecting RNA sequences and their spatial information with physically enlarging tissues.
- Issues of huge processing time with microscopic images in neuroscience.

→ Our contributions

- 35x performance improvement
 - 10GB data (about 6 months analysis → 5 days)



Quantum Computing (QC) Solution

→ Current issue in QC:

– You have several options:

- There are 10+ next generation computers available now...

– You need to commit lots of work to figure out which QC to actually use

- Ex) Quantum Annealing
 - Express your problem in 2-D Ising model
 - Find an efficient way to convert the model to a model that works on the target quantum computer
 - Optimize how to implement “Cost” and “Restriction”
 - Keep iterating through 2 and 3...

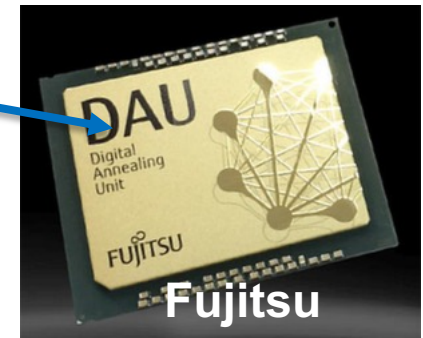
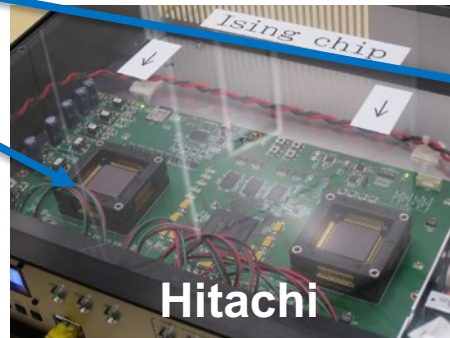
→ Fixstars Quantum Computing Consultation

– We nail down which machine will work best for your application

- Algorithm Research, Software development and optimization, Evaluation

Target Application

Porting



Contact US

➔ Fixstars Solutions, Inc. Website

– <https://us.fixstars.com/>

➔ Contact Form

– <https://us.fixstars.com/contact/input/>

 Thank You



FIXSTARS

Speed up your Business