Al and Data Science Activites in SoftBank Corp.





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Background

Softbank has a wealth of data which is growing ever larger daily

- Data of tens of million of customers
- Activity of customers (Visits to physical stores, My Softbank usage, Questionnaire data, etc.)

- Large number of base stations and cell towers, wifi spots

Utilizing data from these sources, we deliver novel solutions to our customers

Data Lake



Collecting data from a variety of sources and storing it in a data warehouse which we call Data Lake **Conduct analysis and make data-driven**

decisions using accumulated data

Geolocation







Location data collected by base stations and cell towers are used in

- floating population prediction
- anomaly detection
- sight-seeing/shop visit analysis etc...

We use Convolutional Neural Networks to analyze location data



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In Softbank's day-to-day business, we are faced with a large amount of natural language data in the following areas:

- Customer service center

- Intranet help services
- Questionnaire, surveys, etc.

By exploiting NLP, we can transform our business and increase efficiency

ログ

マイペー 本人確認。 ご契約者名

Text classifier

"I want to change to a new iPhone"

"My family uses SoftBank, I want to know the content of discount service"

"Can I use the smartphone I used at Company A with SoftBank?"



label: Use of other companies' mobile phones

Q&A system

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From SoftBank World 2016

We are developing in-house text classifier web application which enables training and inference of machine learning models via REST APIs.

Automatic Q&A System called "AI-FAQ" is used in our call centers. AI-FAQ predicts the crux of the customer's problem based on voice data and assists the operator in answering the query by guiding the operator to relevant help pages.

Chatbot







We provide chat support service, in which a chatbot answers customers' questions. If customers are able to find answers to their questions themselves, we can reduce the time and cost of operators responding to the questions.

We use in-house applications to analyze large amounts of text data. Even people who are not familiar with analytical methods can perform the following analysis.

- Frequent / co-occurrence words
- sentiment / topic analytics
- correspondence analytics



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Background

Computer vision is an important technological area for Softbank. In particular, analysis of camera footage is a hot topic within IoT. Through various experiments, we evaluate the feasibility of leveraging this

technology in our business.

- Image analysis (Counting people/facial recognition)
- Optical Character Recognition/Text analysis
- Object recognition









Joint experiment with Inuyama City, Aichi Prefecture Recognizes the entrance and exit of visitors to Inuyama Castle and automatically updates the congestion status



There is a certain amount of analog documents that our staff must process. We are developing an OCR engine by combining multiple deep learning models

Image recognition

Broken iPhone classification

Broken iPhone classification : over 90 % accuracy on test data

Automated Equipment Inspection



Rust Detection

*Product image for illustration purposes only



We are experimenting with the automation of iphone purchase assessment and build a model to determine the following iphone conditions:

Cracked, Leak, Deformation



key techniques:

segmentation, detection, classification