YasuyukiKATAOKA

Data Scientist

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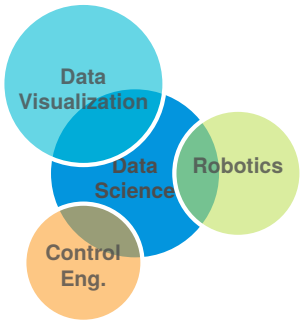
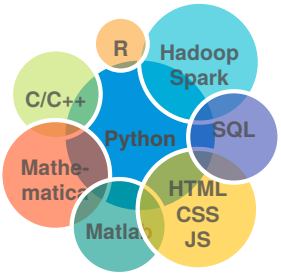
Background



Programming



Summary

My objective is to create innovative IoT / Robotics applications leveraging both Machine Learning and Control Engineering. My current interest is creating machine intelligence beyond human capability by digesting big and heterogenous data.

My work experience is machine learning application R&D over 5+ years, e.g., vehicle analytics, wearable/IoT analytics and NLP. Currently, I am leading the data analytics team in NTT i^3. My role encompasses core product ideation, development, architecture and design, data analytics, visualization, customer engagement, team building and mentoring.

I am passionate about robotics and control engineering. My master's research was **nonlinear control theory on drone system towards fail-safe problem**. Also, I developed **control system software for self-driving car** at University of Waterloo. My goal is to unify my diverse experiences and passion for the areas of AI and Robotics.

Experience

09/15 - Now **Data Scientist / Software Engineer** NTT Innovation Institute, Inc., Palo Alto, USA

Vehicle Analytics - Leveraging time-series & heterogenous data including EMG/ECG, I created vehicle analytic tools for auto racing and cycling. The real-time analysis predicts driver's good / bad behavior and assesses wearable signals based on semi-supervised ensemble learning. The post analysis recommends the optimal track driving strategy by unsupervised learning.

Proactive Healthcare - I created proactive stroke prediction and proactive ADR prediction system by heterogenous data analytics using multiple wearable devices and social media analytics.

04/11 - 08/15 **Research Scientist** NTT R&D, Japan

Real-world Human Activity Navigation - I created an automatic methodology to build the knowledge base of real-world activities by NLP & Machine Learning leveraging social media and linked open data. I aso built recommendation app based on this knowledge base.

Device Orchestration System - One system is web service that classifies user's behaviour pattern during group meeting towards automatic facilitation system. Another system enables media distribution to the devices in user's room through UPnP by proxy server.

Wheel Chair Indoor Navigation System - I successfully managed system integration among 15 members team, and was core developer of indoor location system using BLE sensors.

Education

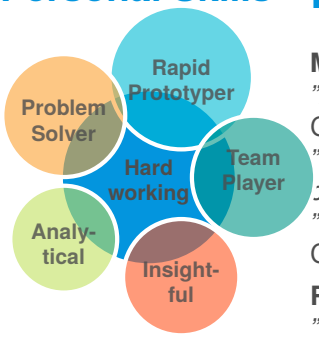
2013-2017 **Ph.D.** University of Tokyo, School of Eng.
Research on Machine Learning application in NLP and image recognition

2009 **Exchange Program** University of Waterloo, Mechanical and Mechatronics Eng.
Development of self-driving car for Robot Racing'09

2008-2011 **Master's (Valedictorian)** Tokyo Institude of Technology, Mech. and Control System Eng.
Research on nonlinear control theory to trirotor drone system

2005-2008 **Bachelor's (top 5%)** Tokyo Institude of Technology, Control and System Eng.
Research on experimental study on jumping-motion nonlinear control

Personal Skills



Languages

Japanese ★★★★★
English ★★★★★

OS Preference

MacOS ★★★★★
GNU/Linux ★★★★★
Windows ★★★☆☆

Publications

Machine Learning

"Mining Muscle Use Data for Fatigue Reduction in IndyCar", MIT Sloan Sports Analytics Conference 2017 (SSAC'17), Mar.2017

"Extracting and Evaluating Ontologies of Human Activities from Linked Open Data and Social Media", Journal of the Japanese Society of Artificial Intelligence (JSAI), Jan.2016

"Service Discovery Method basedon User Intent", The 2013 IEEE/WIC/ACM International Conference on Web Intelligence (WI'13), Nov.2013

Robotics

"Circle Motion Control of Trirotor UAV via Discrete Output Zeroing Control", The 52th IEEE Conference on Decision and Control (CDC'13), Dec.2013

"Nonlinear Control and Model Analysis of TrirotorUAV Model", The 18th International Federation of Automatic Control World Congress (IFAC'11), Aug.2011

+ More on ykataoka.github.io/publication.html

Honors & Awards

03/2017 **Best MPG by Machine Learning Award** Prius Challenge, Toyota Research Institute
Data-driven control design(gear, throttle, brake, EV-mode) to maximize mpg

12/2016 **CEO's Annual Recognition** NTT Innovation Institute, Inc.
the most recognized employee in 2016 based on overall performance

11/2016 **2nd prize (120+ participants)** Mercedes Benz Hackathon@Silicon Valley
battery prediction using IoT data towards smart EV fleet system

02,03/2016 **both 1st prize (300+ participants)** Mylan Hackathon@Bangalore & @Pittsuburgh
Proactive healthcare via heterogenous data analytics

11/2014 **Excellent Research Award** SIG Web Intelligence and Interaction Conf.
Automatic creation of real-world activity knowledge base by social media

05/2014 **Research Activity Award** NTT Service Evolution Laboratories
To the contribution in both domestic and international academic community

12/2010 **SIYSS 2010 as a delegate from Japan** The Japan Prize Foundation
Invited to Nobel Prize ceremony, one of the 25 young scientists from the world.

03/2009 **Excellent Student Award** Tokyo Institute of technology
To the both academic and course achievement during bachelor's.

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Skills

Programming Language
python, R, html/css/js, C++, C, LaTeX, zsh

Data Science / Visualization
sklearn, tensorflow, spark, node.js, MySQL, d3.js
sqoop, hive, bokeh, grafana, mapbox, bootstrap, MySQL, influxDB, MongoDB, SPARQL, HiveQL, Sqoop, hadoop

Control / Robotics
Matlab, MaTX, Matheatica, Maxima, Arduino

Certifications

01/2017- **Self-Driving Car Engineer** Udacity, Nanodegree Program
9 months project - computer vision, deep learning, robotics and more