YasuyukiKATAOKA

Data Scientist

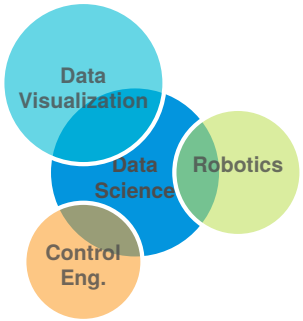
Address
Mountain View
CA, USA

Tel
+1 650 862 7820

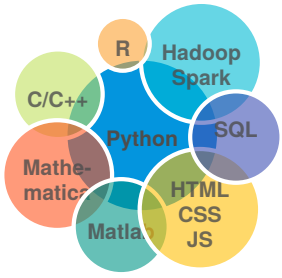
Mail
yk1002jp@icloud.com
yk1002jp@gmail.com

Web & Git
ykataoka.github.io
github.com/ykataoka
linkedin.com/in/ykataoka

Background



Programming



Summary

My objective is to **create AI x robotics / IoT 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., wearable/IoT analytics for driver/vehicle and NLP**. Now, I lead the data analytics team in NTT i^3 : product ideation, data analytics, visualization, customer engagement and team building.

I am passionate about robotics and control engineering. My master's research was about nonlinear control theory for fail-safe drone systems. Also, I developed **control system software for self-driving cars** at University of Waterloo. Now, I am looking for the opportunity to unify my diverse experiences and passion in AI x robotics field.

Experience

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

Driver Analytics - Using time-series & heterogeneous streaming data of IndyCar / general cars, I created various vehicle analytic methodologies and visualization dashboards. The uniqueness is leveraging not only car-telemetry data but also the driver's vital data , e.g., EMG, to capture driver's behavior. One application is data validation of wearable sensors by deep learning. Another application is bad performance prediction (anomaly detection) by semi-supervised ensemble learning. I also developed the dashboard webUI. This highlights potential dangerous moments or relaxation points while driving.

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 also built application recommendation system using this knowledge base.

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

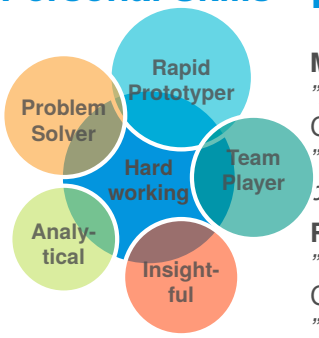
Class of '18 **Ph.D.** University of Tokyo, School of Eng.
Research on Machine Learning application in NLP and image recognition

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

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

Mar'17 **Best MPG Machine Learning Award** Prius Challenge, Toyota Research Institute
Data-driven control design(gear, throttle, brake, EV-mode) to maximize mpg

Dec'16 **CEO's Annual Recognition** NTT Innovation Institute, Inc.
The most recognized employee in 2016 based on overall performance

Nev'16 **2nd prize** Mercedes Benz Hackathon@Silicon Valley
Battery prediction using IoT data towards smart EV fleet system

Feb&Mar'16 **1st prizes** Mylan Hackathon@Bangalore & @Pittsuburgh
Two different proactive healthcare PoC using heterogenous data analytics

Nov'14 **Excellent Research Award** SIG Web Intelligence and Interaction Conf.
Automatic creation of real-world activity knowledge base by social media

May'14 **Research Activity Award** NTT Service Evolution Laboratories
For contribution in both domestic and international academic community

Mar'11 **Valedictorian** Tokyo Institute of Technology
at Mechanical and Control System Department

Dec'10 **Japanese Delegate to SIYSS 2010** The Japan Prize Foundation
Invited to Nobel Prize ceremony, one of the 25 young scientists from the world.

Mar'09 **Excellent Student Award** Tokyo Institute of Technology
For both course work and research 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, control for self-driving car