

CASE STUDY  
Z BY HP AMBASSADOR



## TAKUMI OKOSHI: APPLYING KAGGLE INSIGHTS TO BUSINESS CHALLENGES

Grandmaster fast-tracks validation of high-quality solutions for competition and work with Z by HP





For a child in Japan, baseball as a favorite pastime is not unusual. For Takumi Okoshi though, the real fun came in the stats. He explains, “I played, but also I kept track of my hitting records in Excel and compared them with the performance of professional baseball players. Looking back, I think I’ve loved data since then.”

In high school, he started using Moneyball, a rigorous statistical data analysis that attempts to predict the value of the players by using metrics more granular than batting averages and RBIs.

He analyzed the most valuable hitters to identify potential hidden stars. He says, “I enjoyed that analysis so much, I looked for a college with a strong statistics department.” While at Nagoya University, he studied at the Information Faculty, where he began learning about machine learning and delving into research that used it to decipher the relationship between cheering and outcomes in sports. Okoshi was hooked. He joined Kaggle, the world’s largest data science community, to expand his learning, especially around machine learning.

## AT A GLANCE

### TAKUMI OKOSHI, JAPAN

- Sports Analysis Data Scientist at DeNA
- AutoML Data Scientist at Rist
- Founded an AI start-up after graduating from University
- Kaggle Competition Grandmaster; winner of five gold medals, including first place for PetFinder.my Adoption Prediction
- Baseball aficionado



As a Z by HP Global Data Science Ambassador, Takumi Okoshi's content is sponsored and he was provided with HP products.

After graduation, he joined DeNA, a company that develops and operates a broad range of mobile and online services including games, e-commerce and entertainment content distribution—and also happens to be the top company in Japan for Kaggle Grandmasters—of which Okoshi is one. From there, he moved

experimentation, the exploration, and the sharing that is intrinsic across the community. Even better, he recognizes the wide-ranging benefits that Kaggle competitions offer. “The top solvers share their solutions. Even when the rankings are not good, you can examine the solutions and reflect on what

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Takumi Okoshi, Z by HP & NVIDIA® Data Science Global Ambassador

to Rist, a Kyoto-based IT venture that uses deep learning to train AI to identify and make decisions about audio and visual information that only humans can perceive. He says, “My role is developing AI Pipeline, a type of automated machine learning (AutoML), which automates the task of applying machine learning to real-world problems. My goal is to apply the AutoML I develop for both business use and on Kaggle.”

For Okoshi, the competition on Kaggle is thrilling. He relishes the rankings, the

is lacking. I try to recreate the top solutions from competitions that I have already completed—even in competitions where I lost. I believe that this sharing and evaluation are applicable to business, and as new methods are created, they will be used to solve business and social problems.”

#### **Enterprise-class machines designed for data science**

Like a traditional scientist, data scientists analyze data to support or reject hypotheses



## SOLUTION HIGHLIGHTS:

### HP Z8 G4 1125W PSU

- Dual Gold Intel® Xeon® 6234 3.3 GHz 8C - CPU
- NVIDIA® RTX 8000 - GPU
- 96GB (6x16 GB)
- Ubuntu 20.04
- Z by HP Data Science Software Stack

### Z38C DISPLAY

- 37.5-inch diagonal curve
- 3840 X 1600 at 60 Hz resolution

### HP ZBOOK STUDIO G7

- Approx: 4 lbs/ 2 Kilos
- i9 – 10885H processor
- 32GB RAM
- NVIDIA® RTX 5000 (16 GB VRAM)
- 15.6-inch display
- Ubuntu 20.04
- Z by HP Data Science Software Stack

## PRE-LOADED, POPULAR DATA SCIENCE TOOLS, TURN-KEY & READY OUT OF THE BOX:

Z by HP Data Science Software Stack

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Z by HP Data Science Brochure

about how something operates, try to identify and make sense of patterns in the data, and predict what might happen next. Because we are generating more and more data and because data science has applications in everything from manufacturing to healthcare and finance to government agencies, it's no surprise that data science is one of the fastest-growing job fields. Every organization is anxious to reap the rewards of data science and talent is just one half of the equation—the right tools are mandatory.

As a Z by HP & NVIDIA® Data Science Global Ambassador, Okoshi uses the HP Z8 Desktop Workstation with an HP Z38c LED monitor, and the HP ZBook Studio Mobile Workstation every day and believes Z by HP are the solutions companies are looking for.

Prior to Z by HP, Okoshi had been using a cloud computing system. He says that a machine with a pre-built environment and multiple powerful GPUs has significantly increased both the speed-to-insights and the number of experiments he can run at one time—benefits that would be very welcomed at work.

He points out, “At work, once the AI Pipeline is completed, AI developers will be able to easily try out the latest methods that have worked well in Kaggle and in research organizations. During this development, we are running experiments on open datasets or Kaggle datasets to verify the accuracy. If we had a powerful machine like the Z8 at work, the development speed would be much faster—up to 90 percent faster—and the number of experiments I can run on Kaggle



**“IN THE FIELD OF MACHINE LEARNING, THERE ARE MANY NEW METHODS AVAILABLE THAT NEED TO BE EVALUATED. INCREASING THE NUMBER OF EXPERIMENTS WE CAN RUN IN PARALLEL AND AT HIGH SPEED WILL LEAD TO HIGHER QUALITY SOLUTIONS, FASTER, AND THE Z8 IS HELPING US WITH THIS.”**

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has increased dramatically. In fact, I have been able to incorporate many methods into the pipelines I develop by validating them using the powerful Z.”

Until now, memory constraints have limited the experiments Okoshi can conduct; things like large image size data or video data were just too big to handle. The HP Z8 with NVIDIA RTX 6000 graphics card is both powerful and a time saver.

He says, “In the field of machine learning, there are many new methods available that need to be evaluated. Increasing the number of experiments we can run in parallel and at high speed will lead to higher quality solutions, faster, and the Z8 is helping us with this.”

He envisions this being of particular value for business as they look to exploring various methods to tackle more difficult problems

and create better solutions. In development, data scientists research new methods, then implement them, and then validate them on datasets, a process which can be done more quickly on a powerful machine.

One area that Okoshi is admittedly not as skilled in is building his compute environments. He says, “I don’t have much experience in environment building. However, HP’s solution

comes pre-loaded and ready-to-go out of the box, which saved me a lot of time and hassle. I was able to get right to work.” He runs Python, Docker, PyCharm, PyTorch, and Transformer. All have incredible performance.

And, with the pro-grade HP ZBook Studio, Okoshi can continue his work from wherever. He says, “This is a notebook unlike anything I have experienced before, with a powerful GPU



## KAGGLE: LEARN, COMPETE, CHANGE THE WORLD

- Over 6 million registered Kagglers solve data science problems, gain access to powerful tools and resources, and compete for prizes.
- There are five tiers: Novice, Contributor, Expert, Master, and Grandmaster. Currently, there are 211 Grandmasters.
- Kaggle has run hundreds of competitions, from improving gesture recognition to improving the search for the Higgs boson at CERN. Competitions have resulted in successful projects including furthering HIV research and traffic forecasting. The learnings that result from the competitions and shared on Kaggle are being transferred into enterprise workflows to transform how business works.

Visit [www.kaggle.com](http://www.kaggle.com) to learn more.

despite its portability. I can run experiments or do development outside the office. It's very easy to use."

### **Making big problems solvable**

Okoshi is grateful that he works in a space that helps solve real-world challenges and sees massive potential ahead. He points out that in Kaggle a key goal is generally high accuracy. However, in business there are times when data scientists will discard high accuracy for other reasons. This freedom in Kaggle expands

the realm of possibilities and may provide fresh insights that can also be delivered to the business world.

Okoshi says, "Data science enables us to examine, evaluate and validate better solutions. And the Z by HP is helping us to solve problems we could not tackle before and to do it faster, with extremely high performance and the ability to run multiple models in parallel. From researchers to leading-edge companies, anyone who wants to solve big problems and create real change needs powerful tools like the Z by HP."

## THE POWER OF Z:

Up to 90 percent faster processing time

Significantly increased speed-to-insights and number of experiments running simultaneously for higher quality solutions, faster

ZBook offers powerful GPU with portability to work from anywhere

Pre-loaded and ready-to-work out of the box



LET US HELP YOU CREATE SOME AMAZING BUSINESS SOLUTIONS TODAY

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