

CASE STUDY  
Z BY HP AMBASSADOR



## DR. FIRAT GONEN: A LOVE AND LIFE OF DATA SCIENCE

Z by HP helps Kaggle Triple Grandmaster win first computer vision medal in just 10 days





It was a chance encounter, but one that would change the course of Dr. Firat Gonen's life forever, leading him to become one of the top data science specialists in Turkey and a Kaggle Triple Grandmaster. Within days of studying electrical engineering and fiber optics at the University of Houston in Texas, he happened to pass by a laboratory that caught his attention.

"In my first week at Houston, I saw this weird lab doing a bunch of brain and neuroscience research," Gonen says. "Back then, we didn't call it machine learning or data science but rather pattern recognition. I just loved it. The very next day, I went to my advisor and in the second week changed course and started studying AI and machine learning along with neuroscience. I knew then that data science was my true calling."

## AT A GLANCE

### DR. FIRAT GONEN, ISTANBUL, TURKEY

- Head of Data Science and Analytics at Getir, a leading Turkish start-up
- PhD in NeuroScience and Neural Networks, University of Houston, Texas, US
- Expert in Machine Learning, Deep Learning, Visual Attention/Perception, Decision Making & Genetic Algorithms
- Author of several data science and academic papers
- Delivered 1st Computer Vision Competition medal in just 10 days
- 2nd Computer Vision Competition medal achieved in 2 months 3X Kaggle Grandmaster
- A Kaggle 'addict'



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

He has gone on to author several academic papers and gain extensive qualifications including a PhD in Neuroscience and Neural Networks from the University of Houston. He is an expert in machine and deep learning, and other data science skillsets. His expertise led to an appointment as Head of Data Science

a technical guy to a manager, and I said to myself, 'that's a bit alarming.'

That concern was compounded when he was asked to give a group of students a lecture which involved a coding demonstration. Gonen says, "I couldn't figure out a very simple thing to do," and that worried him.

**"IN TERMS OF MY OWN COMPANY AND AS A VERY AVID KAGGLER, I TRY TO READ AND LEARN ABOUT NEW TECHNIQUES AND TOOLS. THERE WAS ONE PROJECT WHERE WE WERE STUCK, AND I EFFECTIVELY USED THE Z WORKSTATION TO UNLOCK THE PROBLEM."**

Dr. Firat Gonen, Z by HP & NVIDIA® Data Science Global Ambassador

and Analytics at Getir, a Turkish unicorn providing an innovative and world-leading sub-ten-minute grocery delivery service. Getir has recently gone international and has been valued at US\$7.5B.

Gonen applies his data science and AI skills to improve Getir's service and shorten delivery times by predicting, as one example, who will buy what products and when. He says, "Data science is a bit like an oracle's magic ball. You do not have the exact answer, but rather the pattern for tomorrow, and that's really exciting."

While working in the industry and successfully running a team of data scientists, Gonen suddenly realized he was losing touch with what he most loved about data science: hands-on, practical coding. "More and more, I was getting caught up in management stuff. I was shifting from

He vividly remembers the date. It was Turkey's Independence Day when a friend suggested he join an online community of data scientists. That is when Gonen's Kaggle days were born.

#### **Accelerating the power and performance of data science**

"Kaggle is very inspiring but it's also a bit of an obsession and addiction. The best thing about Kaggle is you begin to see your true power," says Gonen. "All Kagglers are equal when it comes to discussing and sharing information, and it creates a huge community where you can learn from anyone in the world and share novel ideas."

Gonen has won several Kaggle medals—the first computer vision medal within 10 days of becoming a Z by HP & NVIDIA® Data



## SOLUTION HIGHLIGHTS:

### HP Z8 G4 1125W PSU

- Dual Intel® Xeon® 6240 2.60GHz 18C CPU
- Dual NVIDIA® RTX 8000 graphics
- 384GB (12 x 32GB) DDR4 2933 ECC registered memory
- HP Z Turbo Drive M.2 1TB TLC SSD
- 2 x 4TB 7200 SATA Enterprise 3.5in
- Premium Front I/O (2 x USB3.1 Type C, 2 x USB3 Type A)
- 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

Learn more:

Z by HP Data Science Brochure

Science Global Ambassador—and is now a Kaggle Triple Grandmaster.

Not only has Kaggle reconnected Gonen with his love of practical data science, but it is also having a positive impact on his work at Getir.

He explains that competitions in Kaggle are driven by international companies trying to solve problems to business challenges and presenting them to the global data science community. It is not just solving simple tasks like an impossible Sudoku, but rather problems that impact people in different areas of life like health, chemistry and engineering.

### **A little extra muscle goes a long way**

Z by HP and Kaggle play a key role in his business. Gonen says, “In terms of my own company and as a very avid Kaggle, I try to read and learn about new techniques and tools. There was one project where we were stuck, and I effectively used the Z workstation to unlock the problem.”

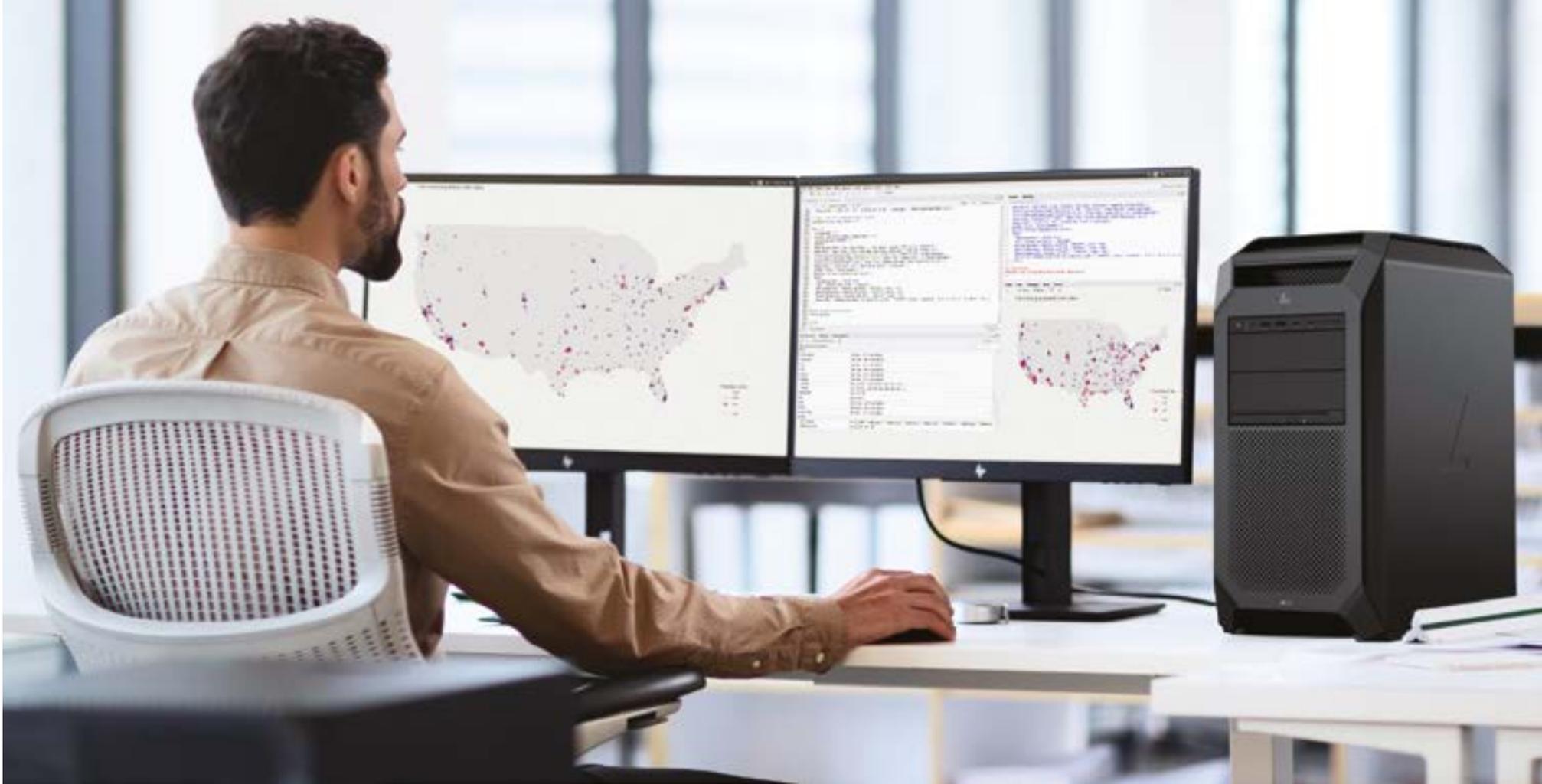
As part of his Global Ambassadorship, Gonen is using the HP Z8 Desktop Workstation, HP Z38c Display and HP ZBook Studio Mobile Workstation, along with the pre-loaded data science software stack.

Gonen was aware of the Z by HP technology but always thought it was far beyond his reach. “I never thought I’d be able to get my hands on technology of this caliber.” Lack of access to equipment like this had made Gonen reluctant to enter computer vision competitions because he



**“THE Z BY HP HARDWARE, SOFTWARE AND FANTASTIC CURVED MONITOR ARE OUT OF THIS WORLD. AND I’M NOT JUST SAYING THIS BECAUSE I’M AN AMBASSADOR.”**

Dr. Firat Gonen, Z by HP & NVIDIA® Data Science Global Ambassador



simply did not have the necessary computing power. But after just 10 days of receiving the HP delivery, Gonen won his first Kaggle medal on computer vision. His second medal came only two months later. He says, "I have won nine tabular data competition medals, but never in this category. This is significant and important for me because it requires a different set of skills and the trend in data

science competitions is toward computer vision problems."

**Compared to a car, Z by HP is a tank**

Gonen likens his experience of the Z by HP technology to driving. "Most people know what it is like to drive a car. If you compare that to a computer in terms of power, then HP has given me a tank. I wasn't used to that sort

of performance, but it was easy to master because of the thorough documentation and a great support system that HP provides. The Z by HP hardware, software and fantastic curved monitor are out of this world. And I'm not just saying this because I'm an ambassador."

Gonen found that Z by HP could process data science code more than 95 percent

faster than standard computing equipment. He says, "When I was using a MacBook I would run code, try it out maybe four or five times and come up with three reasonably decent models. But with the HP workstation, in the same amount of time, I was able to run the same process 100 times. That performance resulted in me winning two more Kaggle medals."



## 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.

Gonen added that without this level of power and performance, data science experiments take two weeks or more compared to hours and even minutes with Z by HP, enabling you to learn more, faster.

The Z by HP tools make participation in Kaggle much easier and more effective. Gonen says, "That's the silver lining of having the power of the Z at your fingertips. Kaggle used to involve data that you could process on a spreadsheet. Now you have tens of thousands of pictures or very long audio files, so it becomes much harder. You need more juice in your computer."

One example is using thousands of high-resolution images to develop a method of classifying cats by type and species. Each high-quality picture of a cat has over one million pixels. Without the processing power that Z tools deliver, it is almost impossible to process that data. You must reduce the quality of each image which reduces data integrity and results in the cat classifier working with 75 percent of data compared to 99 percent. Gonen adds, "When you work on an international Kaggle competition, those numbers make all the difference."

## The right environment matters

The software stack on the Z by HP platform was also important since it creates the perfect environment for a data science challenge. These tasks require access to different data libraries. But some sort of harmony is needed between these libraries and the scientist's own code. Gonen says, "The software on the Z by HP enables that data harmony, 99 percent seamlessly right out of the box."

In an enterprise environment, Gonen explains, "I've already applied some of the Kaggle work on the HP platform to solving business problems. For situations where you are doing research or prototyping models, you should definitely go with local hardware like the Z workstation, versus cloud computing which can be very expensive especially if you are processing hundreds of models."

Gonen concludes, "A few years ago when I came back to Turkey to join a company, I was saying that one day there will be data teams who will give insights to CEOs to make informed and accurate business decisions. Then people laughed at me, and now we're actually doing it. Where will data science take us in the next few years? Who knows?"

## THE POWER OF Z:

95% faster processing data science code vs. standard computers

Data science experiments cut from weeks to hours and even minutes

Supports fast, efficient business problem solving

Transforms the data science and Kaggle experience



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