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## A Hotel Staffed by Robots

Artificial intelligence (AI) is not yet ready to take over the world, but it is certainly smart enough to perform many jobs that were once performed by people. How fast this

by the University of Tokyo, Institute of Industrial Science, and the Kajima Corporation—without, as far as I can tell, any Disney support.

At this hotel, some of the anima-

by an alligator you go to line 3. (See Photo 1.) If you want to be checked in by a real human you have to go to one of the three hotels located inside the amusement park.

AI technology has definitely reached a point where computers can simulate enough intelligence to interpret questions—think of Siri or Google Now—and verbally supply appropriate answers in a manner that sounds human. Besides the robots manning the front desk, the hotel also has robot porters, room cleaners, and an industrial-looking robot running the cloak room. (See Photos 2 and 3.) The press release from the hotel makes it clear that a significant goal of the designers of this hotel and its systems was to “create an atmosphere where humans can enjoy conversations with robots with a hu-



Photos: Henn-na Hotel, Nagasaki, Japan

**Photo 1—Check-in at this hotel is handled by a staff of robots. The person sitting at the middle desk might look and act human, but she is definitely an AI robot.**

technology will continue to develop is anyone’s guess—could AI become dangerous as is shown often in science fiction movies? This is a question that will no doubt be answered some day in the future.

The Henn-na Hotel—staffed only by robots—is located just outside the Huis Ten Bosch Amusement Park in Nagasaki, Japan. It is the only hotel in the world fully staffed by robots and is letting guests get a real peek at what an almost-human-intelligence robotic world might look like some day. At this hotel, animatronics is combined with AI to produce robots that can perform hotel-related tasks usually performed by people.

Animatronics is the use of electronics to simulate the motion and action of living organisms, and the term itself is actually a Walt Disney registered trademark. Since I used the word animatronics, it is important for me to mention this is not a Disney hotel. The design of the hotel and its robots were all done in Japan

tronic creations are made to look human and others are designed to look like animals or robots that act almost human. Each robot uses AI to interact with guests using natural speech through a voice synthesizer. If you speak to them in English, they will respond in English. The robots instantly identify the language you speak and then provide full customer service using natural speech in that language.

The robots at the front desk that check in guests and perform other customer service tasks have camera eyes that send a video feed to a computer that uses facial recognition to personalize the robots interaction with each guest. Their animatronic bodies use the AI of a computer to appropriately move hands, mouths, and lips to artificially provide a simulated conversational customer service experience. At the Henn-na Hotel, if you want to be checked in by a robot you go to line 1, by an almost human you go to line 2, or



**Photo 2—Many of the robots at the hotel have a form that best matches their function. For example, the porter that transports your luggage to your room is a robotic self-driving cart.**

man kind of warmth, while they (the robots) work efficiently” to make your stay as pleasant as possible.

Another goal of the designers of this hotel is to provide guests with a keyless stay. During the check-in

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process, guests' images are fed into the hotel's facial authentication system. When you approach your room without a key, the room's facial recognition lock recognizes you and grants you access to the room. (See Photo 4.)

The big question on many peoples' minds today is will robotics

combined with AI create a jobs crisis as more and more people are replaced by intelligent machines. Business and industry leaders and the stock market all recognize the fact that profits go up as labor costs go down when people are replaced by machines. The room rates at Henna Hotel, the first hotel in the world staffed only by robots, start at \$75 per night.

AI and automation are not yet ready to take over most high-skilled jobs. If you are in school and currently still making future career choices, it is important that you research how AI might affect the careers that interest you. Your goal is to avoid selecting a career that will not exist by the time you finish your education.

**Recalling the Facts**

1. Many jobs that were once done by people are now done by machines. In the next 5 to 25 years:



**Photo 4—The room locks use facial recognition to identify you and unlock your door.**

- a. Which careers do you think will be most affected?
  - b. Which careers do you think will be least affected?
2. Do you think almost human-like robots will one day replace almost all human labor? Why?
3. In a world where robots could create new technology without the assistance of people, would people become irrelevant? Why? ©



**Photo 3—And the robot that runs the cloak room is a robotic arm.**

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