

Robots rise to the fry: how automation is removing the chip on fast-food's shoulder

At Maddyness, we have recently launched our job board to connect the right people with the right roles. To shed some light on what these roles mean, we're talking to professionals at the coalface. This week, we talked to Karakuri's Chief Technology Officer Peter Schroder about automation in fast-food, and what his priorities are as a CTO.

Although the fact of Mr Banks, Charlie's father, *losing his factory job screwing on toothpaste lids* was a minor detail in *Charlie and The Chocolate Factory*, the helplessness of Mr Bank's situation stuck with me as a child.

Before AI swooped in *and threatened to take away 300M jobs around the world*, robots had long been the number one job-thief culprit, accused of putting hard-working people such as Mr Banks out of work. But is this really true in 2023?

I was reminded of this episode with the news that Karakuri, a company making robots to automate fast-food cooking, announced yesterday that its frying robot, */FRYR*, had completed its first trial at Nando's. This robot is no slacker. Over 30 days in 1 restaurant, */FRYR* cooked more than 4 tonnes of chips - on

busy days this amounts to over 250Kg per day. As Karakuri CEO Barney Wragg points out: 'frying is a massive business. Every restaurant knows that serving consistently crispy, fluffy fries will keep customers coming back for more'. I agree Barney - but what about the workers the robot might replace?

Automating fast-food

To get a better understanding of the robot itself - and therefore its effect on fast-food workers - I talked to Karakuri's CTO, Peter Schroder. Peter is also no slacker: his previous role was McLaren's chief engineer.

Peter wastes no time in spelling out why this robot is only good news for the fast-food industry as a whole: for customers, for business and crucially - for workers. 'It's just a miserable job', Peter tells me about frying chips. 'Nandocas [this is for some reason what Nandos calls its staff] don't want to cook chips, they would rather be serving food. It's physically demanding, it's hot and they get burnt by hot, splashes of oil. There's no union of chip frying operators standing up to stop the march of the robots: the workers say bring it on! It's the worst job in the kitchen'.

When I push him on the inevitable fact that despite these gains, some jobs will surely be lost - he points out the fact that the average *tenure of a fast-food workers* is just 12 weeks. 'It is going to replace labour at the end of the day, but it is going to improve the quality of life for the people working. The high turnover of staff means there aren't going to be people who have been working on the chip fryer for 20 years who are suddenly going to be out of a job - maybe just one less staff member per shift'. Food for thought.

Next up are the benefits for everyone else. Apparently, workers have a tendency to either overcook or undercook chips, given their demanding workload. This means the chips taste bad - and - if overcooked and the oil is not properly shaken off, then they are much fattier and worse for you than the perfect crisp, fluffy ideal the robot can deliver.

Given our focus on the interaction of workers and robots, I'm keen to ask Peter about his own experiences building the robot, as well as working at such a high-level engineering and robotics. My first question is simply: why now? This robot, although evidently brilliant at what it does and appropriately priced, *looks as* if it's using tech that's been around a while, so I wonder why it's not been done before.

'The big innovation has been looking at this problem as a product, not a technology push. You'll see a lot of AI-enabled robot arms in restaurants which are simply unaffordable to operate'. Peter tells me a \$12 micro-controller controls the robot. The automation is not in itself simple, but it doesn't require

an AI function that tries to visually interpret its surroundings.

This emphasis on creating something practical and not over-engineered, whilst also being 'compact, simple to use and acceptable from the customer's point of view' doesn't mean the robot is not innovative. Peter tells me that the reason it's really become possible to implement robots like this now is down to two reasons: its connectivity and the labour shortages affecting the hospitality industry.

The connectivity comes from the fact the robot is an IoT (internet of things) system. This just means it's streaming all the data it collects to 'an F1 style dashboard' with remote engineers able to monitor its performance. This allows for maintenance, support and the diagnosing of faults. Whilst the system doesn't technically need a connection to the cloud to work, it's a much more enticing prospect for restaurants knowing this is being closely monitored - and a support engineer can pop round knowing of any faults beforehand.

Being a CTO

Finally, I'm curious to see how this robot embodies Peter's approach as a CTO. He starts off with a personal bugbear about the proliferation of AI within robotics (and the accompanying hoards of 'AI experts'), which is very much in keeping with this system's practicality. 'If you can simplify the environment enough that you don't need AI, you can make a much cheaper and deterministic product. It doesn't mean AI won't exist within robotics - it just won't be doing much of the control'.

It's during a discussion of why more things haven't been automated that Peter makes his personal approach clear. He comments 'one of the reasons is a lot of things haven't been automated is that it's too expensive, difficult, and inconvenient with existing automation technology. The two macro trends trying to solve this are AI and IoT: [the goal is therefore] finding the right levels of automation and intelligence at each layer for the application that you're working on. That's what's interesting as a CTO: trying to find out the minimum you can get away with at each layer! Because it's very easy to just go and stick the maximum application you can find, but those things are rarely economically viable'.

With this challenge in mind, it's worth pointing out that whilst there may be fewer frying jobs down the road, demand for CTOs like Peter is only going to increase. After all: look what happened to Mr Banks at the end of *Charlie and the Chocolate Factory*. Although he lost his job screwing on lids to the robot, he ends up retraining as a mechanic who is hired to mend toothpaste-lid-affixing robots. There's hope for us yet.

Check out a range of live roles at our [comprehensive jobs board here](#) - which includes various technology roles in the UK.

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