

BREW BY MACHINE LEARNING

Your first beer at your local was good, but maybe just that bit too hoppy.

Ideally, you could dial that down, maybe boost up the floral notes and refine your second beer to your own personal tastes.

It's a vision that is coming to life as a result of a collaboration between Adelaide-based technology company Deep Liquid and members of the Australian Institute for Machine Learning, whose directors Simon Lucey and Anton van den Hengel and adjunct professor Dr Jamie Sherrah are helping brewery founder and chief executive Denham D'Silva realise the vision.

As with many good business origin stories, this one began over a few beers, says Mr D'Silva, a former regional vice-president with Merrill Lynch.

Deep Liquid's current beer recipes were formulated by feeding 200,000 or so recipes into a machine-learning process, with the resultant outcome used by the brewers at D'Silva's Barossa Valley Brewing to make products such as "The Rodney" IPA.

Drinkers can scan a QR code on the can and give feedback to the brewers, who can then refine the taste profile.

"The real opportunity here is to be able to create a process leveraging a neural network, that can iterate based on customers' feedback," Mr D'Silva said.

With the ability to turn around a new product in as little as three weeks, this gave smaller brewers an edge over their larger counterparts, Mr Silva said.

Where it gets really interesting, however, is the company's real-time "AI Bar", being debuted at the Treasury 1860 bar in Adelaide on Saturday, and also at the upcoming Beer and BBQ Festival.

Mr D'Silva said drinkers on Saturday would be reviewing a panel of beers and providing feedback, which would result in a tailor-made, personalised beer based on their preferences.

"We can create a beer on the spot for you based on your personal preferences," he said.

The process works by using a “base” beer, to which concentrates are then added.

“In one bar we can literally have hundreds of thousands of flavour components, Mr D’Silva said.

At the AI Bar event on Saturday, the algorithm would not only take into account each drinker’s preference, but also what was being served for dessert, to provide the absolute best fit, Mr D’Silva said.

Mr D’Silva said the company was also working with a convenience store chain on adapting the process for use in energy drinks, with the ability to dial up and down elements such as caffeine and sugar envisaged.

From a company perspective, the main “product” in the long run, would be the platform, not the ability for the company to personalise beers per se, Mr D’Silva said.

“This is truly where I believe AI needs to go,” Mr D’Silva said. “Where AI is being used to augment human endeavour. That’s where it’s really powerful.”

Deep Liquid is just one of many companies in South Australia that are deeply involved in the machine learning and AI shift.

While recent headlines have been dominated by AI chatbot ChatGpt and its later iteration GPT4, companies such as those listed here have been quietly working away on the technology for years, and the efforts are starting to bear fruit. Here are some of the standouts.

FIVECAST

Fivecast’s ability to filter the flood of online data and turn it into credible threat assessments for its customers in government and business has supercharged the company’s growth in recent years.

The Adelaide-based firm was spun out of a Co-operative Research Centre in 2017, growing to well over 100 staff now with offices around the globe including in Adelaide, Canberra, London and Arlington, Virginia – home to the US Department of Defence headquarters, the Pentagon. The company’s AI tools enable it to monitor data sources such as social media, and derive conclusions from that data.

COMPLEXICA

Got more data than a human can possibly absorb and lots of decisions to make in a short amount of time? Complexica can help.

The West Lakes-based firm develops and implements software applications used by large firms to digitalise and optimise their sales, marketing, and supply chain activities.

A couple of simple examples include helping shareholder Flinders Ports decide where to stack their containers, or suggesting sales offers to reps from Liquorland.

Other customers include Pfizer, global wine giant Pernod Ricard, Metcash and Endeavour Group.

CONSILIUM TECHNOLOGY

Consilium has a few strings to its bow, including the ability to create “digital twins” of real-world and hypothetical situations, within which scenarios can be played out.

The end result might be a battlefield rendered by Unreal Engine – the world’s most advanced 3D computer graphics tool used by the leading video game studios – but which also incorporates simulated weather effects such as wind and temperature, for example.

Meanwhile, its Green Brain product allows farmers to monitor soil moisture, growth variability across orchards or vineyards using satellite imagery, and how much rain actually fell on a farm – rather than at the local monitoring station.

LIFE WHISPERER

Life Whisperer helps people conceive by selecting the most viable embryos for IVF implantation.

The company’s research just this month was recognised with an award by a distinguished reproductive technology journal, with the company’s paper describing how Life Whisperer’s Viability artificial intelligence improves the ranking and selection of viable embryos. It does this by assessing images of the embryos, which until recently was done manually.

AEROMETREX

Adelaide-based, ASX-listed company Aerometrex provides a suite of solutions through its MetroMap product, which can, for example, highlight all of the swimming pools, trees or lawns in an area, or identify solar panel penetration. Great for businesses looking to target areas of high density for their product, but look out if you’re looking to build an unapproved addition to the house because that’s pretty easy to spot too.