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# Data Science's exploitation phase is here and looks awfully familiar

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It's a common enough complaint by job-seekers and every university student has made it once or twice.

Entry Level Job Available

2 years' experience required

A post by Paul DeVos brought it home to my situation and reminded me why I've practically given up on searching for a job for the time being (more on that later).

[A large post by Paul DeVos describing a job ad for a Jr Data Scientist that requires nearly a century of high-level experience.](#)

In my case, I've had years of experience in enterprise-level data analytics, programming, data infrastructure, and tailoring data output for high-level media decisions. I'm building a CI/CD pipeline at home, requiring me to learn more DevOps, SysOps, CycOps and SecOps than I ever wanted to spend time on.

Hand up if you'd noticed I'd slipped the word cyclops into that list?

I apologise for the brief CV, but so far none of that has done me any good. I can't translate any of it into so much as an interview for an entry-level data position despite applying for every ad I see on LinkedIn and Seek.

### **It's only sex, boss**

Machine learning (ML), data science (DS), and artificial/augmented intelligence (AI) are the sexiest words in industry right now.

A Cisco IoT tweet with an immense number of likes despite being ultimately quite boring.

This Cisco IoT webinar tweet has nearly 600 retweets and more than 14 thousand likes despite being about a niche topic only a handful of businesses around the world could possibly use. There already exists an enormous amount of content on this topic and it was posted far too close to its own use-by-date for any real ML changes to come from it.

People aren't excited about the webinar, they're cheering on the technology itself, probably not knowing what the intersection of ML/DS and IoT really is. If any of them are running ad-blockers, they'll never see the improvements made by these technologies.

Why? Industry's current focus with DS is on logistics and advertising. They're trying to catch Google's ability to nail

you to the wall with personalised advertising you won't want to avoid.

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When Pakistan's government is trying to look less misogynistic by trumpeting a specific technology, there's a really good chance it's become a PR banner instead of a key tool in industry's kit.

That's not to say DS and ML aren't making huge strides in improving the future of humanity. The way NASA is using it alone makes the number of flies in the ointment worth it.

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If you don't quite understand why that's as important to our economy as better advertising, call me at 0451 139 937 and I'll clear my day for you. There will be learnin'.

**Sexy. Adjective. Object of, or scenario rife with, exploitation.**

Johnny Brooks has a way with words and an insider's perspective on why data scientists make up the [two least happy categories of employee](#) in the IT sector.

He describes a situation similar to my own induction to APN Online a decade ago.

Businesses are being quite rightly convinced that properly-implemented ML and DS technologies hold strong returns on investment for their enterprise.

Unfortunately, these businesses see the figures senior

practitioners are charging and are hiring too heavily toward the junior end of the spectrum. These 'junior' specialists, usually quite experienced IT staff from other domains, arrive expecting a properly set-up DS workflow.

In [most cases they don't exist](#). These data scientists are frequently relegated to creating traditional charts and analytics and executives are growing frustrated with the lack of real results.

And so while enterprises champion ML and DS to boost their credibility, the staff they hire in trial-by-fire methods are the ones [trying hardest to bail out](#).

This is borne out by the Stack Overflow data, which is based on a survey of 64,000 developers. Machine learning specialists topped its list of developers who said they were looking for a new job, at 14.3 per cent. Data scientists were a close second, at 13.2 per cent.

This reality has yet to translate out into the broader labour market. Data scientist [Luke Yiu did two deep dives](#) into pay trends before COVID-19 hit and found more evidence of ML/DS practitioners not experiencing the 'wonders' of the world their corporate marketers had painted.

While the famous brands (in orange below) are paying more for data scientists, everyone else (blue), not so much. The graph below doesn't even show companies outside the Fortune 500, for which the situation is more dire.

[A clustered bar graph with twin bars showing big-tech firm](#)

[pay going up while mainstream IT pay for ML/DS staff going down.](#)

This doesn't surprise me in the slightest. When digital media was the trend-word in newspapers a lifetime ago, I was hired to train the central editorial team in advanced digital techniques.

My job description, verbally, was to seek out new technologies and integrate them into our workflows and enrich the content we published with new forms of high-end ... you get it by now. Sadly, within two days I was doing exactly what everyone else on the team was doing.

### **Entry level, ten years' experience required**

The popularity and sexiness being attached to data science and machine learning makes it a draw-card for the brightest graduates and most driven professionals.

It's not a trivial amount of money being poured into the technology, either. We're not talking about a disruptive force that could see the next Google arrive.

A tweet from Mirco Ravanelli about the \$4.6M cost of training a popular form of AI just once

This becomes even more worrisome when you consider how little ML/AI takes up in terms of an enterprises' development infrastructure, [illustrated here in Google's own documentation](#).

A diagram showing how Machine Learning code is still dwarfed by the traditional DevOps required to run it.

Machine learning code is still dwarfed by the traditional infrastructure required to run it. In my own small-scale uses of ML libraries, I've found training a neural network is far less effective than using the base library itself, and I run my own cluster.

Still, the demand from highly intelligent engineers who get how powerful ML/AI/DS can be is driving the price of labour in the market down as employers get the pick of the crop.

The promise is there: I'll pay you big bucks to work on this emerging technology because we need to keep up with our competitors — show me what you've got.

The downward pressure is difficult to see in headline figures that focus on larger firms. Fortune 500 companies are more likely to over-hire juniors and shift them into ML/AI/DS-adjacent DevOps roles before changing their contract, therefore hiding the pay decrease.

The rest of industry, especially those not focused on technology, will be taking their queue from what they're reading about the behaviour of the FAANG group. Knowing they can't afford the level of engineer Google can attract, they form partnerships with local tertiary education organisations and recruit their best and brightest at an enormous discount.

Meanwhile, those who've wrangled data for years in other industries and know the procedures, pipelines, and pitfalls, have to take major paycuts while [a group of 20-year-olds learn about burn-out](#).

A woman crying next to her bed. Photo by Claudia Wolff on Unsplash

## **Horrifying things that I'm not mentioning but should keep you awake anyway**

Here are a few things to remember about over-selling the ML/AI/DS technology set to the point where we're going to have a glut of engineers with all the skills but nothing to do with them.

ML/AI/DS is useful for:

- Decrypting secure assets
- Facial/body recognition used by police/criminals /authoritarian regimes
- Tracking down abused spouses
- Any number of fun things insurance companies can do to raise your premiums
- Manipulate markets
- Deep fakes
- Introduce false narratives into local and international media
- Prevent you from obtaining finance for a loan
- Did I mention deep fakes?

I am not saying that any of these technologies should not be pursued because they can be used for unarguably evil applications. Using them on the Kepler catalogue of exoplanets alone is, in my judgement, enough to justify

their existence.

These technologies are incredible, they are here, they are staying, and some idiot in marketing has thrown us down a dark path by overplaying their hand with them.

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