

## [Transcript] AI Hustle: News on Open AI, ChatGPT, Midjourney, NVIDIA, Anthropic, Open Source LLMs / Scala Biodesign Employs AI for Molecular Protein Engineering - A Game-Changer!

Welcome to the OpenAI podcast, the podcast that opens up the world of AI in a quick and concise manner.

Tune in daily to hear the latest news and breakthroughs in the rapidly evolving world of artificial intelligence.

If you've been following the podcast for a while, you'll know that over the last six months I've been working on a stealth AI startup.

Of the hundreds of projects I've covered, this is the one that I believe has the greatest potential, so today I'm excited to announce AIBOX.

AIBOX is a no-code AI app building platform paired with the App Store for AI that lets you monetize your AI tools.

The platform lets you build apps by linking together AI models like chatGPT, mid-journey, and 11Labs.

Eventually, we'll integrate with software like Gmail, Trello, and Salesforce so you can use AI to automate every function in your organization.

To get notified when we launch and be one of the first to build on the platform, you can join the wait list at AIBOX.AI, the link is in the show notes.

We are currently raising a seed round of funding.

If you're an investor that is focused on disruptive tech, I'd love to tell you more about the platform.

You can reach out to me at jaden at AIBOX.AI, I'll leave that email in the show notes.

In the rapidly growing field of biotechnology, where artificial intelligence tools are increasingly leveraged to discover new drugs and treatments, Scala Biodesign is creating a unique niche for itself right now.

The company has recently secured \$5.5 million in seed funding with a specific goal in mind, and that is to make existing or promising drugs more practical by molecular tweaking.

This is a really interesting concept that has been becoming more popular recently.

Essentially this is originating from some research at the Wiseman Institute of Science in Tel Aviv, and Scala's founders have essentially exploited the advances in predicting the 3D structures and behaviors of proteins.

They're doing this with tools like AlphaFold and RoseTTA-Fold, which is really revolutionizing the field.

Scala integrates these capabilities with other data streams and is aiming to expedite what has traditionally been a slow, sort of, you know, is pretty much a slow faucet of therapeutic molecular engineering.

The challenge in the biotech sector often isn't just the discovery of potential drugs, but making them suitable for mass production and distribution.

That's usually the biggest challenge that we're facing here.

So some molecular and some molecules really kind of exhibit excellent therapeutic benefits, but they falter when it comes to stability or feasibility, right?

So they're, you know, very promising, but they have some big issues.

And you know, the feasibility for mass production isn't quite there for them.

So identifying which part of a molecule to modify for improved efficacy is far from straightforward.

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This is not an easy task, but this is one where they believe AI can play an important role.

And this is essentially what we're seeing Scala bio design looking to tackle.

So Ravitz Netser, who's a CEO and co-founder of Scala, pointed out, quote, protein development process is very complex and even in large companies, it's largely trial and error.

So scientists engineer them by some flavor of random mutagenesis.

But now that we know the structure of these proteins, it's clear that randomly changing things is not really an option.

So what's really interesting I think here is that if you kind of like consider a protein made up of a chain of, you know, let's say a hundred amino acids with 20 different options for each position, the number of potential, you know, permutations is so astronomically high that randomly testing them, which is currently what a lot of different companies are doing is incredibly impractical, right?

Which is like the amount of random tests you got to run to try to find the best option, even if you're taking kind of educated guess is guesses is really, really difficult.

So that kind of scatter shot approach often leads to dead ends and it's really time consuming.

You know, obviously this in this field, this is going to be the one it's time consuming.

That means it's also going to cost millions and millions of dollars.

So Scala has turned the corner by really kind of synergizing protein structure predictions with clinical data and observations from naturally occurring proteins.

So the result is a computational system devoid of any wet lab experimentation that can focus on high confidence changes for a given outcome.

So whether the aim is to improve stability, enhance effects or, you know, simplify manufacturing scales approach helps refine almost almost their proteins into functional and effective ones.

So if they're just really close, but they have some, you know, small issues, they're going to actually make it so that those are functional and working protein.

So as a practical example, the company assisted a lab developing a malaria vaccine recently, which was based on naturally occurring protein.

So the initial molecule was thermally unstable, which is obviously, you know, imposing some significant challenges for transportation and storage.

We've seen this with a number of different vaccines and other, you know, things where you got to store them at a specific temperature at super cold.

And that's really difficult, especially when you're trying to get, you know, refrigerated vaccines to remote areas of the world where they don't have, you know, say electricity or other things, right?

These are people that are in, you know, great need of a lot of these things, especially like this malaria one, right?

It is probably one of the top killers in the world.

And you know, if they were able to make it so that the molecules were stable in, you know, in different temperatures, that would be really, really beneficial.

So Addie Goldenways, who is a CTO and co-founder remarked, quote, they knew they had a problem

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with thermal stability.

They gave one input and got three outputs, went into the best one, and now it's in clinical trials.

Their CTO was also kind of emphasizing that Scala's capabilities extend to making dozens of mutations in larger proteins, a feat which is not commonly accomplished in the field.

And according to NETSA, the depth and breadth of Scala's validation is very unique.

So from antibodies to eczema's, Scala aims to showcase that major improvements to protein are not mere academic exercises, but can be scaled for industrial applications.

So for now, Scala is collaborating with some unnamed pharmaceutical firms and labs remaining adaptable regarding licensing and kind of business models.

But the immediate priority is to validate and deploy their technology.

The seed funding, which was led by TLV partners, is their first financial round.

And the company has now emerged from self-mode and is actively seeking partnerships and studies with the aspirations of making protein engineering as routine as, you know, they say, checking your email, right?

But I think this is really impressive.

This is a technology that essentially is capable, is available as possible, thanks to advances in artificial intelligence.

We're able to run these AI models, they've generated these AI models, and they're essentially allowing them to check the molecular structure of different medicines.

This is really impressive.

We've seen some really impressive AIs used for drug discovery as well.

And this is just another really impressive use case where essentially they're finding things that are really close to being a good medicine, a good drug, and they're using AI to test a bunch of different variations of the molecules to find one that works.

So definitely a very interesting company that will continue to follow into the future.

If you are looking for an innovative and creative community of people using ChatGPT, you need to join our ChatGPT creators community.

I'll drop a link in the description to this podcast.

We'd love to see you there where we share tips and tricks of what is working in ChatGPT.

It's a lot easier than a podcast as you can see screenshots, you can share and comment on things that are currently working.

So if this sounds interesting to you, check out the link in the comment.

We'd love to have you in the community.

Thanks for joining me on the Open AI Podcast.

It would mean the world to me if you would rate this podcast wherever you listen to your podcasts and I'll see you tomorrow.