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**Accern Podcast Series:**

# **Trends in AI, ML, and NLP**

# Foreword by Accern Founder & CEO Kumesh Aroomoogan



In 2011, the famous entrepreneur and venture capitalist Marc Andreessen famously said, “software is eating the world.” In reflecting on the last decade plus, it’s difficult to make a case against the proclamation. From mainstream adoption of cloud computing services like AWS, to Uber, Square, Airbnb, Oscar, Snapchat, and more, virtually every industry has been disrupted to some degree by software and the trend seems to be accelerating ever more rapidly.

While the effect of software adoption at scale is efficiency and abundance, the byproduct of this trend is that the abundance accrues mostly to those that have the greatest aptitudes and understanding of software. At Accern, our mission is to democratize software, specifically natural language processing (NLP), a type of artificial intelligence (AI), by developing no-code solutions so that people with limited technical knowhow can be free to explore, discover, innovate, and create impactful business solutions. We created the first no-code NLP platform-as-a-service (PaaS) with pre-built data sources, pre-built taxonomies, and pre-built models that can be used out of the box or mixed and matched and combined with other data sources and custom taxonomies to extract insights with the highest accuracy scores in the financial services industry.

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We know that we won’t be the only company to steward mass adoption of no-code tools, artificial intelligence or even NLP (our forte). No-Code has been prominent since the 1980’s when Microsoft Excel empowered users to manipulate data without code. AI has been used to solve problems from making the optimal move in chess to Google providing you with the best possible answer to your question. Most recently, OpenAI’s ChatGPT has revolutionized text creation and got 1M+ users within 5 days of its release (and no, this wasn’t written with ChatGPT).

At the same time, many AI initiatives have been struggling with long development cycles, high compute costs, a shortage of skilled data science talent and failed projects. By working side by side over the years with many data teams and applying our experiences to complex problems like understanding unstructured text – news articles, analyst reports, claims filings, internal documents, emails, chats and more that make up over 80% of enterprise data – we built our platform to make it far easier and faster for business analysts and subject matter experts to accurately classify those documents and score the sentiment contained within them to automate more workflows and discover insights that help solve some of their toughest business challenges.

In this series, we chatted with some of our key partners who are industry experts and thought leaders in asset management, commercial banking, and insurance, about AI/ML/NLP. We wanted to understand the latest trends and the challenges these experts are seeing in the industry, and how AI/ML/NLP is helping research analysts, digital transformation leaders, and data teams to create solutions.

**Kumesh Aroomoogan**  
Accern Founder & CEO

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## On Unstructured Data and Natural Language Processing



The following excerpts are taken from episode one in the Accern Podcast Series. Here, and throughout the series, Accern Co-Founder and CTO [Anshul Pandey](#) leads the conversation. He sits down with NVIDIA Customer/Partner Developer Relationship Manager [Prabhu Ramamoorthy](#). Much of the conversation revolves around the idea that unstructured data and NLP (natural language processing) are the epicenter of AI (artificial intelligence). They touch

on the future of AI and deep learning. And they look at AI applications in fintech. Finally, they consider what makes a great product in AI, ML, and NLP.

### ● On the future of AI and deep learning

When it comes to the future of AI, we are perhaps only constrained by the creativity of our imaginations. Below, Prabhu Ramamoorthy lays out the current state of AI and what he is currently excited about.

He says, “The future is very bright. AI for me and my customers means many things. It could mean quant finance, which we call SPC. And there are areas such as extract transform load

(ETL) machine learning, which is using non-neural nets. So that's the second area. And the third subset is deep learning AI, what we call neural nets. And deep learning can be used for both structured data as well as unstructured data.

“So we see a world in the future where customers are looking for specialized solutions. Today we speak with digital assistants in English. But tomorrow, it could be in various languages. It has to be customized to different dialects and accents. And we see this vision of a deep learning future where you will have a lot of data, and you will be able to train your models to recognize natural language processing. And we would have a full blown solution for unstructured data as well as real time analytics. This area will continue to become intensive within both hardware and software. And we want to be able to support customers in developing those use cases.

“We are going to lead into a world where every language is going to be supported. Things that were not possible, those applications can be done. And you have to have the user driving it to the end customers.”

## ● On AI applications in FinTech

Artificial intelligence, unstructured data, and NLP are changing banking. In particular, FinTechs are deeply involved in AI, in part because it is a competitive advantage. Prabhu explains below.

“In the past, there was a limited application, you had something called a core banking system. That stored banking transactions, and solutions would be built on top of that. But what we are seeing now is that customers are going beyond. For a banking or an asset manager to be relevant, they are competing against the fintechs. And fintechs are serving a bigger portion. Those who are underbanked. So core banks, for example, Goldman Sachs or Bank of America, are now competing with these biggest customers, and they have to ensure that the latest generation, millennials, adopt it.

“The trend that we see happening is this: everybody is looking at large scale greenfield projects in AI. And when I say AI greenfield projects, these are projects related to unstructured data. It could be a chatbot. Or it could be a natural language processing solution which answers the customers.

“This is giving a competitive advantage to that interface customer, so that they can capture more customers. There are two angles to it. Organizations that adopt this gain a competitive advantage. And we also see that organizations that do not adopt this are at a severe disadvantage, and there is an existential threat to their business. Where they probably risk losing out to a competent and successful fintech.”

## ● On great products for unstructured data and NLP solutions

With so much need for products that can solve problems of unstructured data and NLP, what makes a great product in this space?

Prabhu says, “I am always on the business side. You have to take a holistic look at every project, and it has to be connected to a use case. You can do research for the research sake of it. And as you probably know, there are a lot of AI projects in that category, where it’s about enhancing the ecosystem. So that research has to be done.

“But when we come to the end customers, like enterprise financial services customers, the one thing that I see is in order to build a winning product, you have to be able to tie it to a holistic use case. You have to look at the big picture. Understand that that product is helping out in some critical use cases. The cost of AI has become a lot in terms of compute, hardware, and software. You have to hire data scientists. So it obviously helps when you have a product in hand that is able to generate return on investment for the end customer.

“I’ll take an example like document understanding. And it’s providing an ROI. It’s reading mortgage contracts. Key is to put yourself in the mind of the business. The product has to be able to help in an ROI. And that discounts the cost of AI. And now you go there, and you go and start solving business problems, the AI project starts paying for itself. Then you could use an Agile process to increase and innovate the product.

“I believe that’s like the way we have been seeing companies grow. Organizations typically start with an AI Center of Excellence, but then they quickly try to apply it working with business to apply to specific use cases. There is a place for both build-your-own as well as buy-with-partners. So there are two ways where an AI process could be done. In both areas, the customer has to test it out in actual use cases. I would like them to prioritize the ROI and apply it and once they have been in one area. Go to the next area, tackle the next area, and increase the product innovatively.”

02

## On the Role of Banks in Digital Transformation



This next section distills the second episode in the Accern Series on the Mighty Capital Podcast. Once again, our host is Accern Co-Founder and CTO Anshul Pandey. Here, Anshul sits down with LPA Consulting Partner [Daniela Rothley](#) and LPA Manager of Data Science & Machine Learning [George Karapateyan](#). Their conversation centers on the role of banks in digital transformation. Along the way, they discuss the recent cautiousness in capital markets. They

also consider the role of artificial intelligence (AI) in ESG (environmental, social, and governance). Finally, they discuss what banks can do to reduce risks when scaling AI solutions

### ● On the recent cautiousness in capital markets

Daniela notes that in capital markets in recent years there has been much activity around innovation in artificial intelligence. Over the past year, however, these markets have become more cautious. Innovators are realizing that AI solutions are not so easy to implement. And with inflation, war in Europe, and a looming energy crisis, investors seem to be getting more conservative.

Daniela says, “A lot of clients are sitting and waiting. They are still very open for a lot of things and discussions. But they are waiting to implement something really new. So a few years in the past, I would say they were willing to take more risk. Now they are much more averse to risk, from my perspective and overall business sense.”

According to George, “In the flow of priorities that the bank has for themselves, there are so many projects that are already running. Sometimes there is fatigue of different topics that need to be managed at the same time. That innovation or AI are some things that need an additional effort. And sometimes people either stay away from it or wait for some kind of already out of the box solution available in the market that they could buy instead of creating a project from it.

“More regulatory required topics, for example, ESG, are coming more into the forefront. Or topics related to sanction checks. For example, we saw with the current geopolitical situation that there were new sanction packages coming every few months. This was already putting a lot of administrative effort on the financial institutions to adjust their processes. And this was coming more into the priorities list rather than initiating new things. I would describe it as more tactical plan

## ● On the role of AI in ESG

Steve Jobs said you can always connect the dots looking backwards. For instance, we can now trace how ESG (environmental, social, and governance) became such an important topic. It makes sense when looking at all the different things that are happening at a macro level. But what are some of the recent ESG developments that stand out, and does AI still play a role?

George says, “One area where we see some automation opportunities is, for example, in carrying out ESG customer due diligence questionnaires. The point of these is to understand what are some of the policies that the client or the counterparty has with regard to E, S, or G factors. These questionnaires are sometimes very tedious to respond to. When you need to do it on a much larger scale, and when your relationship with the counterparty is more of a customer and seller relationship, or financier and a client relationship, you might want to also automate and make this process as simple as possible.

“One way to do that is, for example, to extract from existing unstructured sources of data potential suggested answers to these types of questions. Where a human can have a look at and confirm. Rather than search in thousands of pages of documents to find one specific policy or criteria for measuring this or that. This is where I see a potential application of AI, in text analytics and natural language processing.”

## ● On how banks can reduce the risks in scaling AI

While there’s a lot of appreciation for AI within product management generally, that sentiment might not be shared everywhere. Indeed, it’s important not to delude ourselves that just because we understand AI and build AI models, that the rest of the world also interprets and sees it in the same way. Right now there appears to be a lot of backlash against the phrase AI. So how can banks reduce the risk of scaling AI projects to really deliver transformation?

According to George, “The technology itself has moved from its hype phase to a more mature phase. There is a lot of disillusionment among the people who have applied it, or tried to apply the technology to solve one or the other problem. They realize that it’s not just, give it to AI and it will do it for you. But rather, you need to define concrete problems, and source the necessary data. You need to be able to build a good model. You also need to monitor the model, update it, and then implement it. There are a lot of challenges connected to this.

“That’s why I often avoid even using the word AI in conversations. Because it’s just creating the sense of, okay, there is some kind of a magic machine that is going to do everything that I want. Or the narrative is, oh, there is some kind of a machine that is going to take my job away. Which in either case is not true. That’s why I often just call it an intelligent solution, or smart solution. Because this goes into the narrative that we augment the process. We improve it. Make it smarter. And we take out the dumb parts of the process, which are more just simply looking at things, searching for keywords, or doing repetitive tasks, and automating that in a more clever way.”

George continues, “I think that one reason for this backlash is an internal conflict within financial institutions. On the one hand are the practitioners that want to apply the technology. They are from IT or quant teams that know how to code themselves, and they are very excited to try out new technology. On the business side, they just want something that functions and is very fast. And sometimes the business has an idea. But for them to have this idea tested out, it takes a very long process and a long time to get to the result of that. Oftentimes, the business just avoids doing this.

“This is where I see, for example, no code actually bridging this gap. Because business-oriented users can test the hypotheses by just simple drag and drop configurations. The barrier to that is just going to be the IT departments in financial institutions. They might see a threat to that. But I think this trend cannot be stopped because it is quite big.”

03

## On the Role of End-User Experience in NLP



These final comments come from episode three in the Accern Podcast Series. Our host is once again Accern Co-Founder and CTO Anshul Pandey. Here he speaks with Capgemini Data Solutions Strategy Head [Arun Prasad](#). They discuss the role of end-user experience in natural language processing. Arun lays out three trends in artificial intelligence (AI). These include data, modeling, and user experience. They also consider the role of AI in verifying insurance claims. A common thread throughout the conversation is the importance of no-code and low-code platforms to empower users.

### ● On three trends in AI

Arun says, “It’s a combination of three steps. The first one is all about data. It’s about bringing as much relevant information to the problem at hand. And how can it be sourced through from the rightful mechanics of picking the right variable, picking the source. Making sure that there is no model drifting around it. That it’s current. And the currency of the data is good. And also bringing about historical values. These are non-traditional insights mixed along with the traditional insight. So that’s problem number one in AI.

“Problem number two is modeling in itself. How can we make better models, more adaptable models, and the ability to reinforce the learning? Making sure that it’s bias free, and ensuring that it’s relevant to the use cases. Because in a fast changing environment, you don’t want to

go back and keep changing your models every time. So there's a resiliency aspect around the model itself.

“And then the third is also in user experience. Thinking about how the end user will perceive these things. If you're talking about underwriters in an insurance organization, claims adjusters in the insurance organization, or you're looking at a product person who's evolving new products in the insurance industry. Or the end consumer, who's probably the insured themselves, looking at their score. They want to know more about what's going on behind the scenes. And that's why there's a huge buzz these days about low-code/no-code platforms. Enabling the end user to actively give inputs and then have a combined experience at the delivery stage so that they can actually consume it.”

## ● On the role of AI in verifying insurance claims

Arun says, “In the pandemic, most of the insurance companies had a big spike in the number of business interruption claims. The volume of these claims were so large that you don't have the facility to figure out which one is false, which one is right, etc. And if you're a product owner, you're always wanting to know, is there any coverage gaps that exist? Are there any exclusions that are explicit? You also have to worry about the interpretability of the exclusions.

“Case in point is we were working with an insurance company. We had to go through some 1200-plus forms for a single product line. And talking about one product line to figure out if there is any misinterpretation possibility. If there are any gaps in coverage that were not priced accordingly. Or any potential choice of better language for the upcoming new iteration. It's a very sensitive topic and it's also a very important topic as a product owner.

“Today there needs to be a system in the insurance industry which can actually collate and highlight things that could be misinterpreted. So that's why the prior company that I work for, ISO, has isoforms and that's validated and figured out. There are no other forms out there that they can actually utilize. But manuscript ID forms go through a lot of pain, you know, when such massive action happens. So it's a very good opportunity for AI systems to help the product owners, the underwriters, the claims adjusters in a massive way.”

## ● Empowering end users through no code

According to Arun, “When looking at low code/no code platforms, you're changing the game quite a bit. You can empower the end user. They say, ‘Oh, I can actually change the behavior of this dashboard by myself.’ Or ‘I can change the way that the system is behaving by myself.’ Going to the admin section, and then changing certain parameters and making sure that it's behaving the same way as you want it to. Without needing a big budget. Without needing the development information that you can actually go through, right. That's a very big enablement or primary. What's stopping you is the ability to empower the end users to low code no code.

“There are other issues, such as availability of data at the right time, and having an infrastructure that could support. And enabling a culture, if you will, to have somewhat ‘open mind’ for adopting newer upcoming non-traditional data insights. Rather than saying that, okay, this is how I’ve always been doing it. And these are some things that I’ve always done. Instead, take that from an experience perspective, and also add to it more information of a non traditional nature, coming to you just in time. So the accessibility of that is also a very big deal. Today, that’s stopping consideration for NLP use cases across the board.”

## Wrapping up

In summary, it is clear that artificial intelligence, machine learning, and natural language processing have a wide range of present use cases, as well as implications for the future. From verifying insurance claims to carrying out due diligence questionnaires, NLP AI has the potential to vastly improve efficiency and accuracy in virtually every industry. While we learned from Daniela Rothley in episode two that many investors have been cautious about new AI investments, the wildly successful OpenAI ChatGPT proves that effective solutions will be adopted quickly. And as Arun Prasad affirms in episode three, the real potential is in empowering end users. In that sense, it is easy to sympathize with Prabhu Ramamoorthy when he says, in episode one, “the future is very bright.” We couldn’t agree more.

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