01:56  
Alexey   
This week, we'll talk about visualising machine learning. And we have a special guest today, Meor. You probably saw Meor on LinkedIn where he shares amazing visualisation about different machine learning concepts. One of the last ones I remember well was about drift in machine learning. That was a pretty cool one. How often do you post things?

02:23  
Meor   
I used to do it regularly. I started sometime last year and I was doing almost one visual every day. But now I'm starting to do it a bit less regularly. But I’m hoping to put more visuals soon and go back to my earlier cadence.

02:44  
Alexey   
You also wrote a book about neural networks. So do check it out. Welcome to our event!

02:53  
Meor   
Thank you for having me, Alexey. It's a pleasure to be here.

## Meor’s backround

02:57  
Alexey

Before we go into our main topic of visualising machine learning, let's start with your background. Can you tell us about your career journey so far?

03:06  
Meor

I was introduced to machine learning almost 10 years ago. I decided to stop whatever I was doing in my career and do a master's degree doing research in limb prosthetics. I was introduced to machine learning. I did this master's in bio engineering, with a plan of doing a PhD. But I stopped after the master's and continued without a PhD.

03:42  
Meor

Back then the excitement around AI and machine learning was not today. The research was relatively slow. There was not much breakthrough. I didn't see many applications in the real world at the time. I decided to go back to working and joined a company in the telecommunications industry. I was doing data engineering and analytics for telecommunications data. I did that for 6-7 years. But I wanted to go into education or even childhood education.

In 2019 I decided that I wanted to do something else. I went into self-employment mode and became an independent consultant. Initially, I was doing training and consultancy in telecommunications analytics and slowly moved into education in childhood. I've always wanted to do AI and machine learning which revived my interest in the past couple of years. I did AI educational resources for middle schools and high schools under the name of x-square, it's still there.

That was happening right until the middle of last year when I encountered a fun way of creating educational materials for adults using visuals. I came upon this approach without any background in design. I was just trying to apply visuals into explaining the concept of machine learning. That's when I started to create these visuals under the name of kDimensions. It has been going on for almost 8-9 months now. That's where I'm at currently. I'm still doing the other things that I started before. But slowly my focus is now on the kDimensions.

## kDimensions

06:10  
Alexey   
Why this name?

06:15  
Meor

It's quite obvious. It borrows from the concept of machine learning - dimensionality reduction. For example, if you talk about a machine learning problem, you have data that is very big, let's say 1000s of 1000s of features. What you can do is compress it into several features that are much less than what it was before while maintaining the same amount of information. That's the concept behind PCA and other algorithms of dimensionality reduction. I had the same idea with visuals as well. That's where the power of visuals comes in. You compress a lot of information into a visual that you otherwise would write down. With a visual, you will retain the same information as with the text, but you can go straight to the essence. People can get it immediately.

That's the idea. K is the common letter that people use when reducing the dimensions from n dimensions to k dimensions when people do PCA, that's why the name came.

07:35  
Alexey

I expected that. That's a good idea for the name. Take a complex idea, simplify it.

## Being self-employed

07:35  
Alexey

In 2019, you became self-employed, and started being an independent consultant. You started also working on these visuals. Was it scary for you to go solo?

08:04  
Meor

It was because I've always wanted to do it for a long time, even after I completed my Master's because from then on, I wanted to do something in the education space. Throughout my career, I was doing some other small ventures in education, especially childhood education. But of course, with the question of having a job, you don't make the full commitment, because you have this something that you can fall back on. But I thought the time was just right for me to be full. I didn't have a clear plan. I do have some ideas and went into it. Luckily, I'm managing well, so far.

## Visual engineering

08:52  
Alexey

There is a guy called Jack Butcher. He has a Twitter profile called "visualise value", and a website as well. They see some similarities in what you do and what Jack is doing. Did you get inspiration from him with coming up with all these visuals? Or what kind of sources of inspiration did you have when you decided, "I want to follow this format". How did it start for you?

09:28  
Meor

It started with him. I was browsing through my feed and came upon this very simple and minimal visual, but that gives a bit weight in terms of the perspective of the message that he wants to bring. I never saw such visuals and started to dig deep into his approach. I enrolled in his course called "How to visualise value" which explains how he goes through this process of making visuals and the idea behind it. I was mind blown by the philosophy behind it. I wouldn't say he's the first one who has done it, but he made it mainstream.

I still haven't figured out the right term for this whole category yet, but the closest I can find visual engineering. It's not “engineering” in the technical sense, but it's about using visuals for you to convey a message. You create a visual that amplifies or makes better what you are trying to convey. Jack's visuals fall under this category. I was amazed.

That's when it all started for me. I was already doing machine learning educational materials, back then primarily with X-square for childhood education. But I thought that I could apply the same thing - simplifying missionary concepts, and applying them using visuals.

11:40  
Meor

There are many reasons to do it. One of the reasons is that there is more information that we need, when it comes to machine learning because there are so many resources, there are courses, books, blog posts, code examples, it goes on. How do you curate this content? How do you condense this content into something digestible for people?

It's an interesting industry to be in right now: a lot of people are interested in this subject. People are motivated to learn. I hope to be able to give them something to learn, to open the door for them before they explore things in more detail. For them to be able to grasp the concepts simply - to “get it” at the intuition level, before they go further into what they are doing.

It's not just Jack, there are many other people I look up to. In the machine learning space, there are a lot of very talented people who create visuals. First and foremost, for me, one of them is Jay Alammar. He has a blog that explains concepts around neural networks. For example, word2vec transformers. He has a blog post illustrated transformers and has a lot of other kinds of materials as well. That's the resource I go to to understand these concepts. I found it relatable for me to visually look at the concepts and get the intuition before going into the math, before going into the code.

The list goes on. For example, StatQuest with Josh Starmer. He simplifies the understanding of machine learning and data science using visuals by way of video. Luis Serrano, as well. He has this book "Grokking Machine Learning". He also creates wonderful videos that explain these concepts.

When you pair visuals with code and math, then you go deeper into any subject in this field.

## Constrain yourself to get creative

14:12  
Alexey

You were already in the educational space. Then you were browsing through your feed, and saw a visual from Jake Butcher. You thought, "This is so cool. I want to do something similar." When I saw images from Jack, I thought “It would be cool if somebody would do something similar for machine learning”. A few months after that, I saw you on LinkedIn and that was it! I said, “This is as if Jack would cover ML”. I didn’t take his course. But when I listened to a podcast with him, he said that “restrict yourself - on purpose”. He only uses two colors and simple shapes.

15:16  
Meor

He also has a lot of very interesting perspectives about visuals. And beyond visuals. One of the things I took away from him is that you have to introduce constraints in your work. It’s true for visuals and for anything in life, especially when you're creating something.

He uses just two colors - black and white, geometrical shapes, abstract concepts, and that's it. He says “constraints breed creativity”. It's ironic. People would think that to be creative, you have to have a lot of resources with you, talent, a lot of tools, and a lot of ideas. That is true. But when you introduce constraints, you're forced to work with what you have. That's when you get focused. You're not worried about the other things that you can potentially do. When you see the visuals from Jack - you can do amazing things with the constraint that you impose on yourself.

16:45  
Alexey

You use only three colors?

16:50  
Meor

For me, it's about explaining technical and complex concepts. I tried to use two colors, but it didn't work for that purpose. So I use three colors. The background is dark, and just three main colors: red, blue and white. I found that is the right equilibrium. It has served me well, so far.

## Coming up with ideas

17:33  
Alexey

How do you come up with these ideas? For example, you recently created an illustration about “drift”. How did it happen?

17:41  
Meor

My approach is first to introduce the constraint - the style constraint that we have just discussed. The other thing - introduce constraints in terms of the topic that you want to visualize. For example, “drift” that you just mentioned. I’m not yet sure how I’m going to make it, but I will stick with it and I'll make sure that I can create some kind of visual related to drift before going on to other topics.

Once you have the topic, you introduce a time constraint. Within a few minutes, you put on paper whatever you have in your mind. That's when the magic happens. The moment you have something written or sketched, you can improve on it. You cannot improve on blank things, but you can improve on things that are already there, no matter how ugly looks now and how different it will look at the end.

## Visualising difficult concepts

18:55  
Meor

The other thing that works for me is trying to visualize not “what it is”, but “what it means”. What I learned from Jack, when you try to visualize a concept, you don't visualize the noun, but the verb or the objective. That's when you can extract the message that you want to deliver.

In the drift example, I was using a catapult throwing the ball into the basket. At the time, the idea I had was about accuracy. Not for models - if you're thinking about models and algorithms, then you're stuck with boxes and squares or rectangles and arrows. This is the noun of what you're trying to represent.

But try to understand what it’s trying to do. It’s trying to be accurate. That's when you think about metaphors. What kind of objects can you use to represent that? It brings another benefit: if you use metaphors and objects that people can relate with, you make the concept less intimidating. If you use rectangles and arrows, people can get an idea, but not quite. Then they feel like they are not yet attached to the idea. But when you show everyday things, they understand these things, and it becomes the bridge to understand the real concept that you want to represent. Metaphors and abstract concepts are the two things that you may want to look into if you're trying to visualize things.

21:26  
Alexey

Okay, so first, you think, "I want to create something on drift” Then you give yourself a bit of time, use a timer, set it to 5-10 minutes. And then you start brainstorming, like “How can I show the action? What is the action there?” By the way, what was the action in that visualization of drift?

22:03  
Meor

The original model is just a basket with data. If the catapult is not functioning well, you miss. If the ball changes its shape, it misses too. That's the data, the source. But conceptually, it's about the target that is changing. From a basket, you're changing it to a basketball game. You need to hit the target, so you need to adapt your source to match the target.

I can give another example - the concept of data-centered AI. When people talk about data-centered AI, it does not mean that we relax on model development. We have focused so much on model development, fine-tuning, and all that, but haven’t focused on data. So when we talk about data-centric AI, people think that it’s about data, not the model. The model is there as it is. But the thing is, you need to have both, you need to have balance.

That was when I figured out this idea of an airplane - on one side with a wing of a modern aircraft, and the other side is less developed, the wings from the 50s. For the aircraft to function well, you need to balance both sides. Algorithms on one side and data on the other side. It’s not like one over the other, but both at the same time. People might be able to relate to that.

## The process of creating visuals

24:07  
Alexey

Can you walk us through the process of creating it? How did you come up with the idea? Did you want to create something on data-centric AI? Or first, you had an image of your plane in your head and then you did this? Can you walk us through the entire process, from the beginning before you even started working on this to the end where you publish this on LinkedIn?

24:38  
Meor

I don't have any rigid ideas. Whenever I'm reading a new concept or trying to understand new material, to understand it and get to the core of the message, I'll write down the concepts without adding any visuals. I put them in a long list. The ideas don’t always come immediately, so it’s important to maintain this list. I review this list every week. If something occurs frequently, it’s interesting and I want to nail my understanding of this term, I put it to the shortlist.

26:00  
Meor

Once I've got the shortlist, then I figure out how to visualize these concepts. I start to think backward. For each concept I want to visualize, I think “what is the key message?”. That's also part of the learning - when you are trying to learn something, you want to get what is the essence of this concept. For example, for drift, things are changing - that’s the essence of what you want to learn. The source changes or the target, and you're trying to try to adopt that. So that's the concept that you try to learn.

From there, you decide on how you want to figure out what the verb is. What's the key message? What does it mean? Then we try to translate that into a visual.

There are different kinds of visuals that I find interesting. The first kind is about concepts - machine learning, data-centric AI, drift, and all this. But the other thing that is also very interesting to visualize is the emotional aspect. I'm talking about the realities in the field.

For example, we talked about creating a data science project and a data science solution. Normally you start with a problem, then you work your way towards the solution. But a lot of people - me first and foremost - are guilty of starting with the solution first, and working backward to find a problem that can be solved. You’re so interested in the algorithm or the solution that you're building.

Can we visualize it? If you can show the arrow should be from the left to right. But what you're doing is from the left to right. You try to touch these emotional points that the viewer can relate to and understand where you're coming from. That's also interesting for me to explore.

28:57  
Alexey

So to summarise it. When you consume content, you keep a long list of things that you read about. Let's say you read about drift today, then you take a note and read about other things. Then you see drift again, and you realize it’s interesting for you. Then you start spending more time learning about it, and then you move them from the long list with ideas to the short list. For ideas in the short list, you take them and try to elaborate them. You think “How can you see action there?”. You also mentioned that there are two kinds of visuals you like creating - concept and visuals that convey emotional aspect. So longlist, shortlist, getting some inspiration, brainstorming, and then actually sitting down and creating the visual?

Capturing ideas  
30:26  
Meor

To be frank, it doesn't always work that way. For example, ideas might come to me when I’m in the shower or driving. That's why it's handy to have a sketchbook that is dedicated to visuals. Whenever I have an idea, even if I haven’t figured it out yet, I sketch it. It's also useful to have an app that you can use to immediately write down your ideas and quickly log in what you have in your mind. That has been handy for me.

31:07  
Alexey

Do you use a voice recorder or do you type?

31:11  
Meor

I type.

## Creating visuals

31:14  
Alexey

What do you use for creating your visuals?

31:17  
Meor

I use Figma. I don't have any background in design at all, I'm a pure engineer. I have been an engineer for many years. I'm not anywhere near people with artistic skills. I've tried Canva when creating content for x-square, so I explored that too. But it doesn't have much flexibility. I've also tried Adobe Illustrator. That's way too advanced for me, it has a learning curve that you have to go through before you can become comfortable in using it.

In the course, Jack introduced me to Figma, which is the sweet spot between Canva and illustrator. It's not that hard to operate, but you have a lot of flexibility to create exactly what you want. The learning curve is not steep at all. You can get up and running in a couple of days. If I can do it, most other people can do it as well.

There are other tools as well. I’m an engineer, so my approach is more on geometric shapes, vectors and vector images. But if you’re more artistic, then you may prefer hand sketch.

33:31  
Alexey

So, you have a sketch note. When you have an idea, you take sketches or sometimes just notes. Then use Figma to create the visual. Do you always first create a draft on a piece of paper before moving to Figma?

33:53  
Meor

Most of the time, I will write it down on paper first. When the idea is not developed yet, you have a basic concept of what you want to do. You have to figure out what kind of objects to put there. For example, you have the relationships, one thing is here, the other thing is there. Then you want to make an arrow. You want to create a contrast. You haven't figured out the end visual yet. But once you put it down, it's ingrained in your mind. After a couple of days, when you figure out how to do this, transfer it to Figma.

It's not always the case though. Sometimes I get an idea and immediately jump on it. The number of visuals that I made has grown, so I have a lot of existing assets that I can use to create something new. It's not always the case that you're creating something from scratch. You can utilize objects and high-level concepts from visuals you made, reuse and modify them according to the new thing that you want to create.

35:22  
Alexey

If you need a catapult or a basket, you just go to that “drift” visual, copy the catapult and paste to the new image and use it. That's cool.

## Learning to create visuals for engineers

35:32  
Alexey

For somebody like you - an engineer who hasn't worked with anything like Figma - how can they start creating visuals? How can they learn this?

35:55  
Meor

Take Jack's course. I cannot recommend it enough. It's very ironic because Jack Butcher was a designer for 10 years. But he taught me that you don't have to be a designer to create visuals. I found that you can turn your “bug” - not having the designer brain - into your biggest feature. If you focus on the design part, you're not focusing on the message that you want to convey. You want to focus on the message over the aesthetics. If you're focusing on the aesthetics - like “How does it look?”, “How would it turn out?” - you don't spend time on the message and making sure people who look at your visual will get it.

When you put this constraint, you understand that this is the level of aesthetic that you can have - and not beyond that - then you spend your energy on the perspective you want to convey. I find it very interesting to be able to get that perspective that will empower you.

37:33  
Meor

That's from the philosophical aspect. From the practical aspect, you just have to start playing with things. The moment you start to put things down, that's when you will develop. Of course, it comes with practice.

In the beginning, I was very pumped up to start creating these visuals. I looked at content from Jack and other creators like him, I started to write down ideas and created around 10 visuals. Then I was ready to start posting them. But then I thought “What’s next after that?”. I didn’t have any idea what I was supposed to do. I only had these 10 ideas, but nothing beyond that. But I just started posting. That's when it slowly developed. More ideas start to come in. That's when I started to relate to what I was learning. When you're reading, consuming content, you're just doing it for consuming. But when you start to consume content with the intention to create something, to learn, to explain to others using visuals, that's when you start to get ideas coming in. And it will not stop.

38:54  
Alexey

You mentioned that not having a designer brain is helpful because you can focus on the message, not on aesthetics. I am not a designer, but when I need to create a presentation, I sometimes spend too much time on moving things and making it look perfect. What I should be doing instead is focusing on what I'm going to say. This slide can be just empty. I think it's similar if you focus on what you want to draw instead of how nice it looks.

39:41  
Meor

Also, when you create such visuals that are minimal, when you’re not focusing on aesthetics, you're respecting people's time. They are busy people. They have many things to do at work. They need to watch many things, consume a lot of content and understand the concepts. Another quote from Jack that I found interesting is that what he's doing is working hard to give people less. That's the whole point. You're respecting people's time. you are giving it as what people want to receive, immediately consume, and convert. On the other hand, being easy means you make your life easier. You're not worrying about things that you're not supposed to be worried about. You're just worried about things that you need to focus on, which are the message and the perspective. It seems to be a great combination.

## Consuming with intention to create

40:50  
Alexey

One of the things you mentioned is “consume with intention to create something”. Can you tell us how it works?

41:00  
Meor

The same way is true for visuals and other ways as well. When you consume content to explain it or teach others, your perspective becomes different. When you have the intention to teach, you're more invested. You're looking at the material on the surface. You're trying to dig deep. If needed, you will look at other materials that are supplementing what you're trying to understand. You get to the bottom of what you want to know. Compare it with learning just for consumption. Your understanding is totally different - you get a much deeper understanding. If you're going to create something with visuals or anything, if you have the intention of explaining it to others, it makes 10 times more impact compared to doing without it.

41:58  
Alexey

The best way to learn something is to teach it. When you read an article, you think, "This is a cool article. If I wanted to explain this article in a single image, what would this image be?” or “what’s the main idea in this article that they can take away and turn this into a visual?” Does it work like that?

42:24  
Meor

When you're reading, consuming content, you are getting “what it is”. But if you're learning it with the intention of explaining it to others, you also learn “what it is not” and “what can go wrong”. What if you did something else instead of what you are being shown? You start to look at other perspectives and angles - you’re not just getting the one-dimensional view like when you consume content. That's when you start to think of "what if?" instead of "how to?"

If you are given a step on how to do ABC, like “how to train a machine learning algorithm”. If you have the steps, that's fine. But when you start to think about “What can go wrong?”, “What else is missing?” “What if I do something else?”, “What if I do it without machine learning?”. Normally, those are things that you don't think about if you're just consuming. But if you're planning to teach it to others, those are definitely the things that you will need to keep in mind that you will explore and try to discover.

## Learning by breaking code

43:37  
Alexey

How do you come up with this “What if?” and “What can go wrong?”? If you have practical experience, then you can use it. But if you're just learning this thing, how can you know about these things?

43:55  
Meor

If you're talking about coding for machine learning, you can explore ways to break the code. For example, you take something that someone else has done. They share it on medium with the code. You don’t not just try to run the code, but also try to make changes. What if you were to change this parameter? What if you were to change this algorithm? There are a thousand things that you can change and see what happens.

So you start to think about it. Your goal is to understand it in totality, not just how it's been presented to you. You're forcing yourself to look at it in different ways and try to really nail down your understanding.

## Earning with visuals

44:47  
Alexey

Thanks! You said that since 2019 you're self-employed. You don't work for a company, you work for yourself. You mentioned that you were doing some sort of consulting and training, but now making visuals is part of what you do. Are you making money with your visualisation skills? Can you tell us more about how you earn money with this?

45:14  
Meor

Now it's slowly becoming one of the main things that I'm doing these days. Starting early this year, I've introduced this visual design service for companies. I help content creators to turn their message into a visual. This way they can serve the audience to consume their content and understand their products and services. I help them understand what they are trying to serve, their value proposition, and so on. I'm working mostly with machine learning and data platform startups that are looking to grow their business. Also I’m working with content creators who are trying to create text-based content, and who want to expand that content to deliver their message in a more clear way.

46:19  
Meor

It's very enjoyable for me - not just from my own perspective, but also from what the other party wants to convey. It's also a challenge for me, because there are new things that I need to explore and force myself to understand. Let’s take machine learning companies. There are companies that are doing data platforms, explainability, end-to-end MLOps. Before I can help them with creating visuals, I need to understand their product. That takes some time. But it's a rewarding journey: I get to understand more compared to just looking at it from the outside. I've been doing it a lot more these days, compared to what I used to do before.

47:25  
Alexey

So, you first started publishing visuals on social media: LinkedIn, Twitter. Companies saw it and started to reach out to you. How did you make it clear that you can offer these services and they can come to you?  
  
47:43  
Meor

It started with companies and people. They reach out to me and ask if I provide such service. Initially, I didn't do any, I was just doing it for myself. Then I became interested in it as well - in doing it together with them. In the past few months, I've started outbound reach to people and companies that might be interested. And now slowly building the service side of the business.

48:17  
Alexey

That's interesting! You didn't start with the intention of earning money. You started with the intention of exploring this area and using visualization skills trying to convey your message. You were also learning (relearning) machine learning, so it was a way to consume and regurgitate the content - show that this is how I understand it. You started doing this regularly, and then, at some point, companies noticed this and thought, "This is so cool. We also want to have something similar. We want somebody to come to us, listen to what we do, and explain it in a simple visual". That’s cool!

## Adding visuals to blog posts

49:00  
Alexey

One thing you mentioned is sometimes there is a bunch of text-based information - an article - and you need to add visuals to this article. Do I understand correctly that companies come to you for this service?

49:16  
Meor

Companies have blog posts about concepts related to their product. To add a visual to that, I need to summarise whatever that they are trying to deliver in that blog content. Some companies want to create marketing material and ebooks that explain the concept. Adding visuals will really give a greater impact on what they want to explain in that material. This is what people will remember. There are a few other ways as well. I'm currently working on it.

50:01  
Alexey

Cool! And this is all without having a designer background!

Can you tell us a bit about this? You get an article, which is just a wall of text and nothing else. I imagine it’s a boring article - at least for me because I cannot skim it. I have no idea what it is, and I can’t convince myself to invest time in reading it. So when I create content, I understand that I need to make it easier to understand what this is. But I always have problems with adding visuals to text. How do I add visuals and illustrations there? Do you have some suggestions for people like me? I can come up with text, but I struggle with illustrations.

50:56  
Meor

I do it in the same way as I consume this content myself. First, you take the first pass on the text. Try to extract the top four or five keywords that are always appearing in the text. They contain the key message of a blog post. Once you have listed down all the keywords, try to understand not just what they are, but also what they mean and what they're trying to convey.

Let’s take a data platform that makes it easier for a non-technical person to access the data. It reduces the number of steps from four to two. You can do a comparison of the number of steps that a person needs to take without the solution, and you draw it. Then, on the other side, you just take two steps - as simple as that. That's a simple example, but you can always play around with many different concepts.

52:20

Meor

For example, is it about the contrast between two concepts? Can you look for contrast? Can you talk black and white? Then you can show that one concept is different from the other while being in the same space. There are other things like balance. You can imagine a scale that shows that one concept is more important than the others.

If you have many objects, like a spectrum of different ways of doing something, you can think of something like a slider. Then you want to convey that and you need to put the slider somewhere in the middle. You need to put this kind of emphasis whenever you're considering two concepts. With trial and error, you will normally find the solution eventually.

53:18  
Alexey

So, take a pass over an article, extract 4-5 keywords. Try to understand what is the key message and the main takeaway from the article for the reader. And then try to visualise it - follow the same process that we discussed half an hour ago. This way you create a visual for the entire article.

But let's say you have one section that explains one thing, then another section that talks about a slightly different thing. Do you apply the same process? You take a section, understand its key message, and then come up with a visual that illustrates it. Is this correct?

54:06  
Meor

So, what you mention is five or more visuals in the same article instead of just one visual. Sometimes you can relate these visuals, but sometimes the concepts are so different that you cannot relate to them. In that case, you cannot push yourself to create something because now you're diluting the value. The most important thing is to deliver the message efficiently. If you can relate different concepts - great. Like if you were to split different visuals into different concepts. It’s a good bonus.

I noticed that concepts in data science and machine learning essentially boil down to just five kinds of problems that we want to solve. They are classification, regression, anomaly detection, clustering, and reinforcement learning. I figured out a way to relate these five concepts using the same base visuals. They are the same kinds of data points. By imposing different perspectives to each of the five concepts, people can relate to them. If you have different visuals for different concepts, it doesn't give as much impact. If there’s no easy logical connection between them, but you can come up with something, there's a bonus.

## Meor’s book: visual introduction to deep learning

56:01  
Alexey

I also know that you wrote a book. You recently came to DataTalks.Club’s slack to answer questions about your book. Can you tell us about it? And how did you come up with the idea behind the book?

56:15  
Meor

It’s the same thing: I wanted to nail my understanding of this concept. Writing a book forces me to get to the bottom of it. I didn’t want to rely on frameworks like TensorFlow or PyTorch, and instead, build a simple neural network from scratch - including doing all this backpropagation. That forced me to do all these steps. It gave me the idea of creating content based on my journey.

57:10  
Meor

I find deep learning and neural networks are especially interesting compared to other algorithms. It's very modular. You can start simple and build upon it. I thought it’s an interesting idea for me to create a book that explains the concept from the ground up. You can start with a simple neuron, move to a neural network with one hidden layer, and then to an even bigger neural network. It all starts with a single neuron. You're having these Lego bricks that you can use to build a big Lego structure. I thought that it would be a natural subject to explain visually by writing the book.

Also I was able to connect different concepts and come up with this basis. Whenever I'm creating content, I try to tie together the whole thing into a story that people can navigate, and can have a logical flow from start to finish. That's what I've tried to do with this book.

58:56  
Alexey

Did you first come up with text and then created illustrations? Or did you first come up with illustrations and then wrote text for them?

59:08  
Meor

I started with big concepts: the number of sections and pages. Then I made placeholders for visuals. After that I started to fill in concepts one by one. First, I create a visual and then add the text explaining it. If you look at the book, the text is very minimal. People without much time can digest the content and get enough value to understand it. So, it's visuals first and supplemented by this concise text. After I've formed up the logical steps on creating the content

1:00:02  
Alexey

We forgot to mention the name of the book. The name is, "Visual Introduction to Deep Learning".

## Wrapping up

1:00:12  
Alexey

We should be wrapping up. Do you want to say anything before we finish?

1:00:16  
Meor

That's it! I want to thank you for having me here. It's a pleasure. I follow DataTalks.Club for some time already. I admire the work that you're doing with the community. The kind of content that you are creating is helping a lot of people to ramp up in this industry. Thanks also to you for creating all of this!

1:00:46  
Alexey

Thanks! How can people find you? LinkedIn, Twitter?

1:00:50  
Meor

People can find me on LinkedIn, Meor Amer. If you want to look at the visuals that I've made, you can go to the website, kdimensions.com. If you'd like to find out about the book, as well as the visual design service that I have, there's also more information on the website.

1:01:18  
Alexey

I'll put these links in the description. That's all for today. Thanks again for joining and sharing your expertise with us. Thanks, everyone for joining us as well, for watching us, and have a great weekend!

1:01:41

Meor   
Thank you!