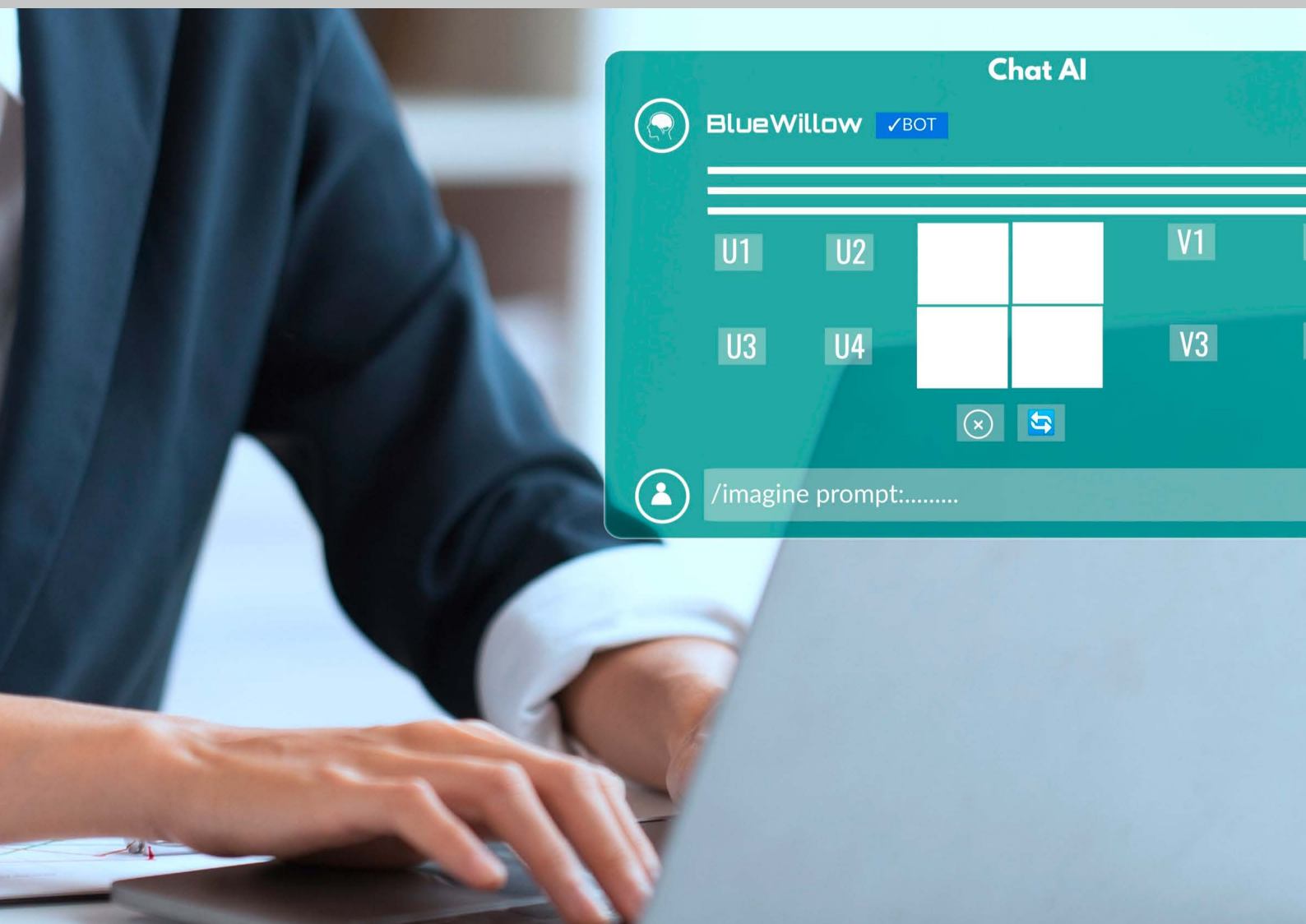




Generative AI in patents

FORUM IP Talks with Sebastian Goebel

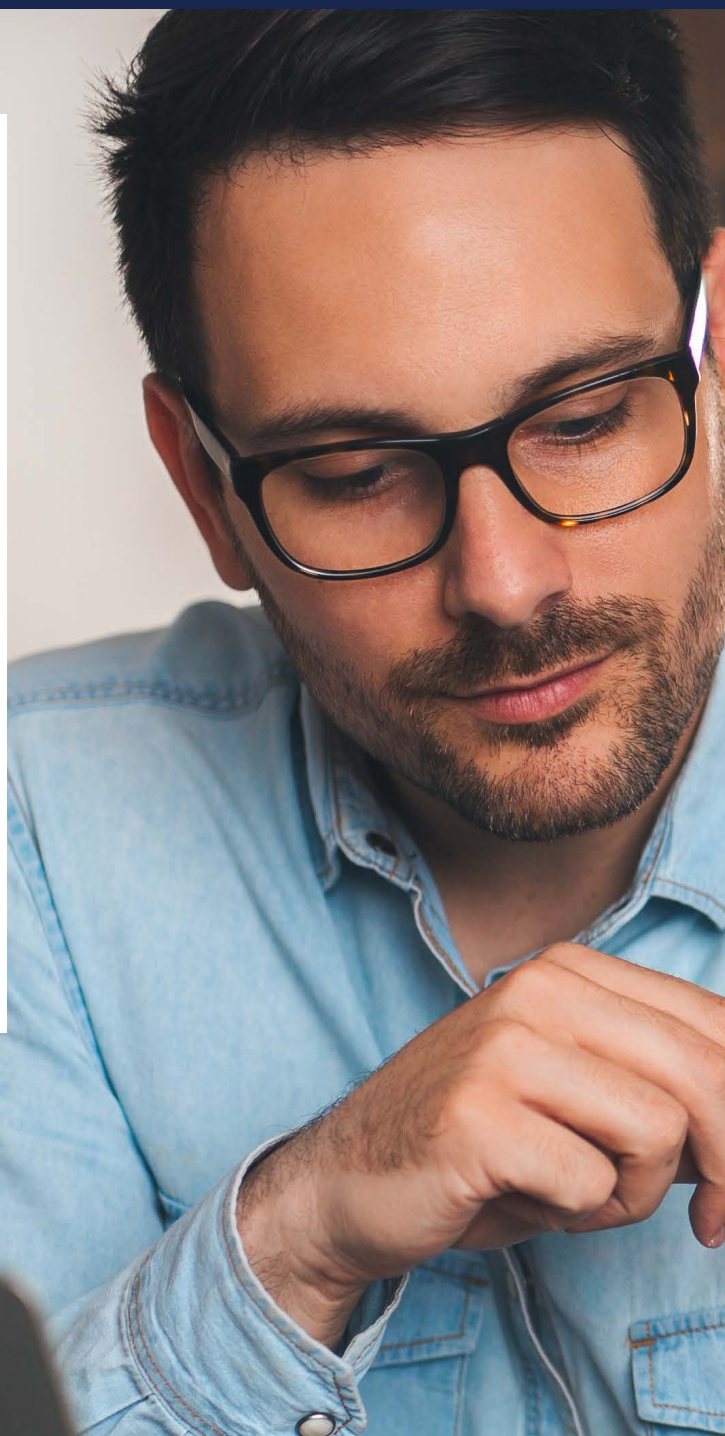
Dear Reader

In this whitepaper, we delve into the insightful discussion between Sebastian Goebel and me on the evolving landscape of generative AI and its implications for patents.

As AI technology advances, it challenges traditional intellectual property frameworks. Our speaker and me, we explore the nuances of patenting AI-generated inventions, addressing the legal and ethical considerations. This dialogue highlights the need for adaptive policies to ensure innovation is both protected and encouraged in the age of AI.

Join us as we navigate the complexities of generative AI patents through expert perspectives and forward-thinking analysis.

Jean-Claude Alexandre Ho



About the author



Sebastian Goebel

Sebastian Goebel is a European and German Patent Attorney and a founding partner of Bösherz Goebel, a decentralised, highly digitalised boutique patent law firm with patent experts throughout Germany. His professional focus is on the protection of digital technologies. Sebastian is passionate about AI and software development, both now and through his previous work as an electrical and computer engineer. Other areas of his expertise include medical engineering, electrical engineering, electronics, and signal processing. He is also a co-chair of the I3PM's IP & AI Committee.

FORUM IP Talks: Sebastian Goebel on generative AI in patents and the fear of „being replaced by AI“

Jean-Claude: In your experience, what are the most significant benefits and challenges you've observed when integrating generative AI, such as ChatGPT, into daily patent practice? Can you provide specific examples of how this integration has transformed patent work?

Sebastian: I believe that by no means all relevant use cases for generative AI in IP have been fully explored yet. But there are already many promising approaches for its use, which are showing their first practical benefits. What is clear is that Generative AI makes most sense when it is seamlessly integrated into processes. You will know this if you regularly use ChatGPT for your work via the web interface. In this case, the degree of automation will quickly reach its limits without customisation. One of the aims of our workshop is therefore to enable and motivate participants to integrate and customise this technology to their needs.

One of the biggest challenges is certainly still digitalisation. Integrating Generative AI into business processes requires digitisation. If you're still relying heavily on manual processes and paper files, you don't even need to think about AI. Digitisation alone can, however, speed up administrative processes already many times over. And then the door will be open for generative AI, which will lead to at least as much acceleration of substantive legal work.

From my experience, primarily larger companies and law firms are already using or at least testing customized AI setups. If they don't begin to act, many small and medium-sized companies and law firms are wasting a lot of potential here.

Today, knowing how to use AI may give you a competitive advantage. But not for long, and it will be difficult to stay in the market at all without the use of generative AI. A lot of people see this as a problem - „being replaced by AI“ - but I don't think it has to be that way. After all, smaller companies in particular are much more specialised and flexible. The cost of introducing AI can therefore be lower, while at the same time its use can be more targeted and individual. This will therefore also be one of the focal points of the upcoming workshop I will deliver: How to find applications for generative AI that can achieve significant improvements in efficiency and quality at a manageable cost.

Jean-Claude: How does generative AI contribute to the efficiency and accuracy of patent drafting and prosecution? Could you share insights on how these tools have changed the approach to these critical tasks?

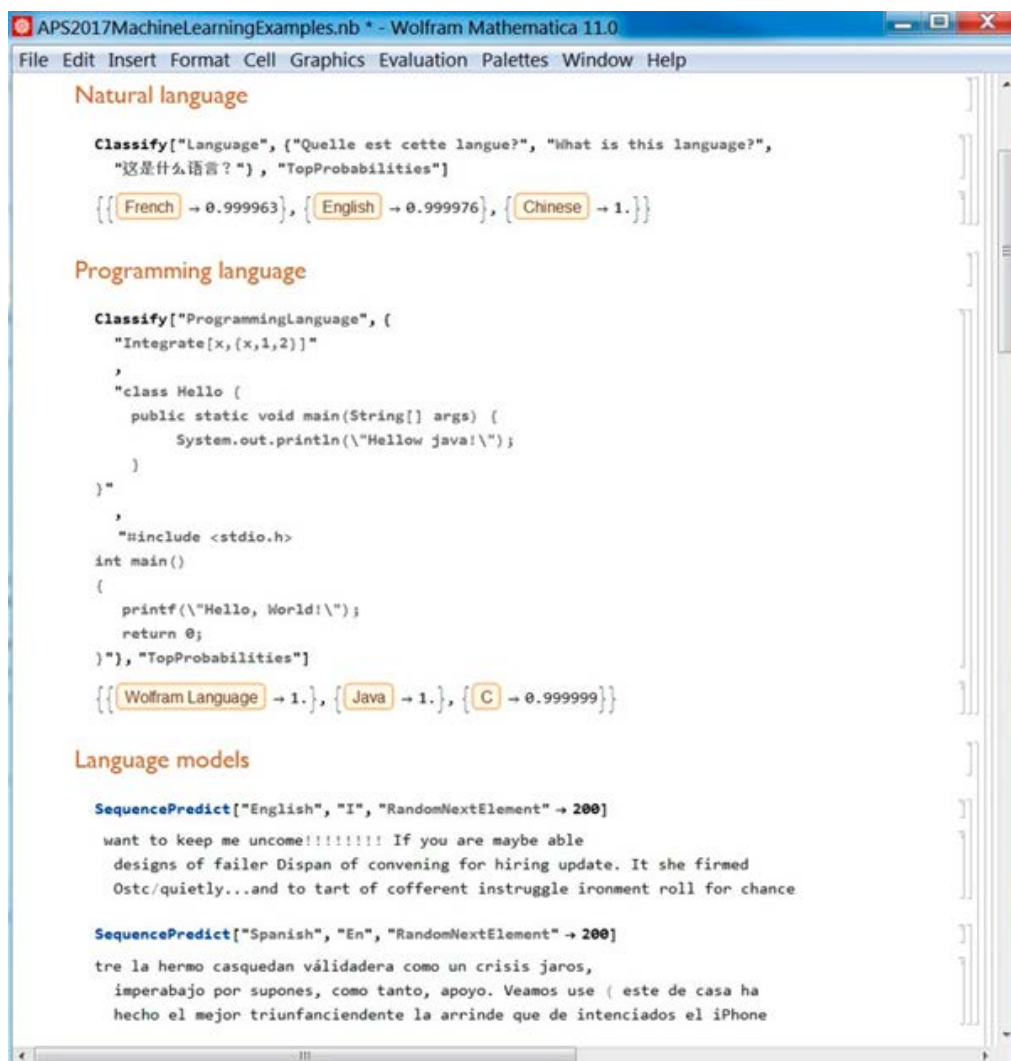
Sebastian: Patent attorneys mainly work with language. Whether it is the formulation and legal interpretation of patent claims or the consideration of arguments before courts and patent examiners as to why a technical solution is inventive. Large language models (LLMs) have revolutionised the machine understanding of language. Hardly any other technical development may therefore have such an impact on the substantial work of us patent attorneys as generative AI.

However, we are still at the beginning of this development and current AI tools have many teething problems. It often goes like this: users try tools like ChatGPT or even specific IP industry tools for the first time. Initial enthusiasm is followed by disillusionment. Promised functions are not delivered. The AI-generated claims may read well, but they turn out to be legally worthless. AI's classification of a document as destroying novelty does not stand up to scrutiny. The case law cited in the letter to the court is completely fictitious.

However, many of these disappointments can be avoided if you understand how language models work. The key to the successful use of AI is therefore the user's understanding of the new technology. You need to know how and for what you can use it, and where the limits lie. In other words: Intelligence is now primarily in demand from humans, not machines.

In my view, one of the first major benefits of AI that we can already use is the analysis of large volumes of data. For us patent attorneys, for example, this is the evaluation of patent documents. One of the artificial intelligence features that many are most excited about is RAG - Retrieval-augmented generation. This allows to reduce hallucinations and to scrutinise the output.

Another feature that I think makes our work better, without errors creeping in through hallucinations, is AI brainstorming. The language model can be a sparring partner for optimising the claim set or for thinking out of the box for the drafting of patent applications or searching for arguments.



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APS2017MachineLearningExamples.nb * - Wolfram Mathematica 11.0
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Natural language

Classify["Language", {"Quelle est cette langue?", "What is this language?",
  "这是什么语言?"}, {"TopProbabilities"}]

{{{"French" -> 0.999963}, {"English" -> 0.999976}, {"Chinese" -> 1.}}}

Programming language

Classify["ProgrammingLanguage", {
  "Integrate[x, {x, 1, 2}]"
},
  "class Hello {
    public static void main(String[] args) {
      System.out.println(\"Hello java!\");
    }
  }"
},
  "Hinclude <stdio.h>
int main()
{
  printf(\"Hello, World!\");
  return 0;
}"}, {"TopProbabilities"}]

{{{"Wolfram Language" -> 1.}, {"Java" -> 1.}, {"C" -> 0.999999}}}

Language models

SequencePredict["English", "I", "RandomNextElement" -> 200]
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Ostc/quietly...and to tart of cofferent instruggle ironment roll for chance

SequencePredict["Spanish", "En", "RandomNextElement" -> 200]
tre la hermo casquedan validadera como un crisis jaros,
imperabajo por supones, como tanto, apoyo. Veamos use ( este de casa ha
hecho el mejor triunfanciende la arrinde que de intenciados el iPhone
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Jean-Claude: What role does generative AI play in enhancing patent search and portfolio management? How do these advancements compare to traditional methods used in these areas?

Sebastian: Generative AI makes it possible to understand huge amounts of data automatically. Even if it is still prone to error at the moment, it still offers enormous added value compared to manually reviewing this data. I imagine that in the future it will be the norm not to search for keywords in data, but to communicate with it using natural language. Ask-your-data and AI-powered searches will allow patent laypeople to do their own searches and evaluate them with reasonably reliable results. On the other hand, the patent landscape is becoming increasingly complex. Professional users, such as patent attorneys, will also benefit greatly.

Jean-Claude: Generative AI tools in the field of patents must navigate complex technical and ethical landscapes. How do you address concerns related to data security, accuracy, and ethical considerations in your work with generative AI?

Sebastian: For us patent attorneys, the biggest challenge is certainly confidentiality and data security. Initially, the same problems arise as with any use of cloud software.

Depending on who operates the servers and where they are located, the use of cloud LLMs can be at least problematic, if not legally impossible. A solution in many cases, however, is to use local LLMs, which are improving all the time and are likely to be perfectly adequate or even more suitable for specialised applications such as in patent law firms.

Before you can use AI productively, you should also be familiar with both the legal framework, such as the EU AI Act, and the company policy. As a law firm, you are also well advised to be transparent about the extent to which AI is being used. Our clients will have their own requirements about how and to what extent AI should be applied. Adaptability to different needs would be an advantage here.

Jean-Claude: Looking ahead, what do you believe are the upcoming trends in the use of generative AI in patent law? Additionally, what skills should patent practitioners develop to stay ahead in this evolving field?

Sebastian: AI is increasingly moving from a technology reserved for a few experts to a tool that, like other off-the-shelf applications, is intuitive to use and relatively easy to customise. It is already clear that patent searches are likely to be transformed. AI will fundamentally change the way we analyse data and documents. Then it will certainly be normal to use LLMs for drafting. In the same way that automated features such as auto-completion and spell-checking have been integrated into word processing, AI features will increasingly assist us.

However, I believe that fully autonomous drafting of patent applications, including claims, is illusory for the foreseeable future. This would require AI to take into account a large number of stakeholder interests. This is where the human patent professional comes in again, at least to provide the LLM with the right input.

In addition, patent attorneys will need to develop new skills to use generative AI effectively. This requires an understanding of generative AI. This will therefore be a focus of the workshop, where we will analyse and learn to apply the mechanics and functionality in detail.

Sebastian, thank you very much for the interview!

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