



# novomind iAGENT AI

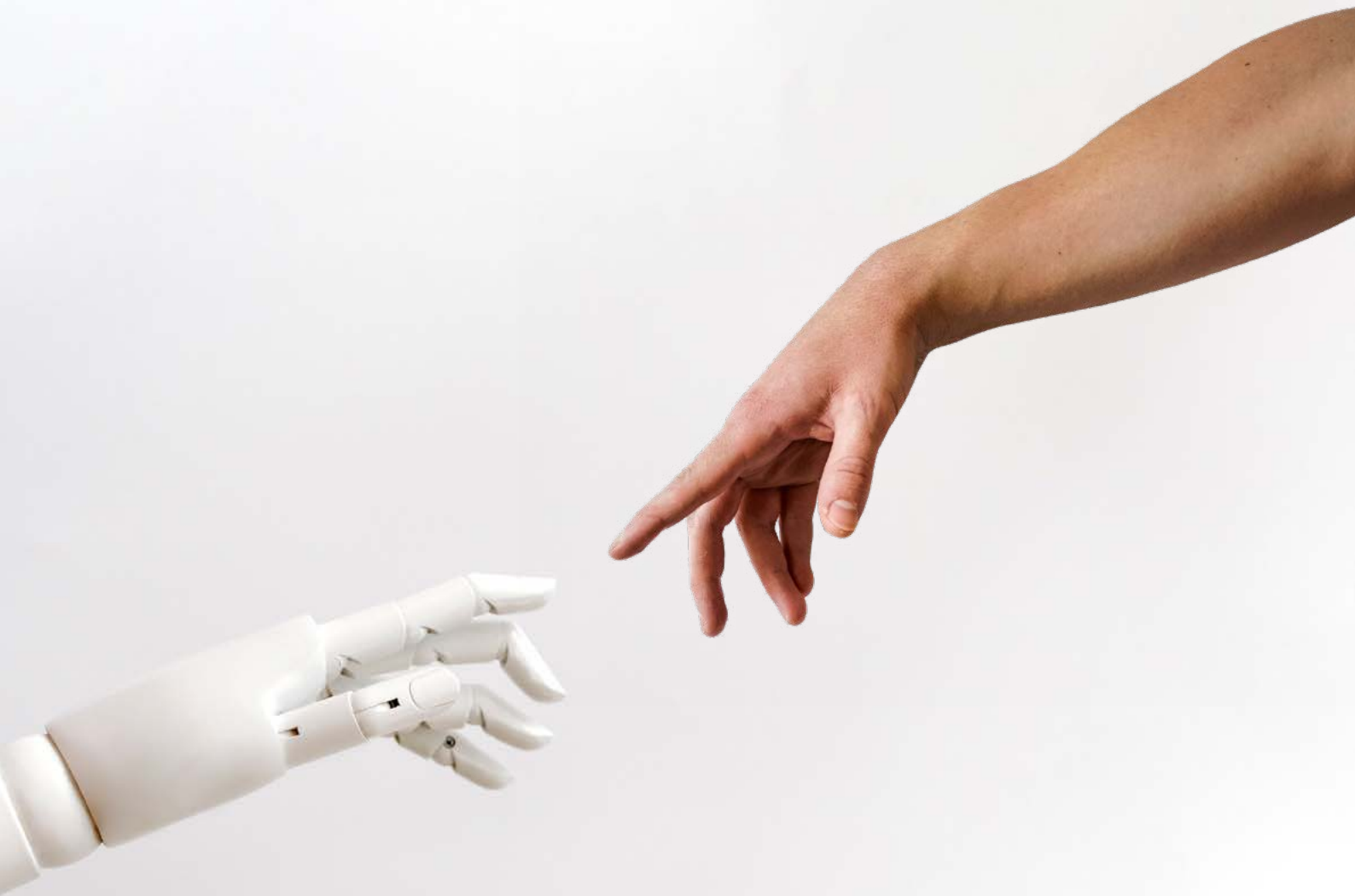
State-of-the-art Natural Language Processing (NLP) methods for next-generation customer service



# Recognition means understanding.

To significantly improve response times and automate the processing of customer enquiries, we have developed novomind iAGENT AI, that combines the benefits of state-of-the-art machine learning algorithms like transformer-based language models with our rule-based engine.

novomind iAGENT AI is an integral component for every customer interaction on our platform, from automated processing and categorisation of emails to intelligent chatbots that not only recognize individual questions, but understand the entire context of dialogues to personalize the customer experience at scale.



# How it works

The powerful novomind iAGENT AI supports all incoming enquiries from multiple channels including E-mail, WhatsApp or call as follows:

## ● Categorisation & Sentiment Analysis

One or multiple topics are recognized and categorised for every ticket to identify key events. Powerful sentiment analysis can understand indications of frustration, stress, and different moods to deliver support with empathy.

## ● External Data

External data from CRM or ERP systems can be fetched to enrich ticket data and response suggestions. External AI Services such as Google Translate and DeepL are deployed. Pre-trained models are fine-tuned to the specific customer case.

## ● Response Suggestions

With intelligent response predictions, AI-powered search through past responses on similar topics, and pre-defined templates, novomind iAGENT AI supports agents with essential knowledge that ensures the successful resolution of customer enquiries.

## ● Intelligent Routing

novomind iAGENT Chatbots or fully automated responses using NLP handle routine requests. More complex requests are seamlessly routed to agents based on individual skillsets to ensure the delivery of the best customer service.

## ● Reporting & Analytics

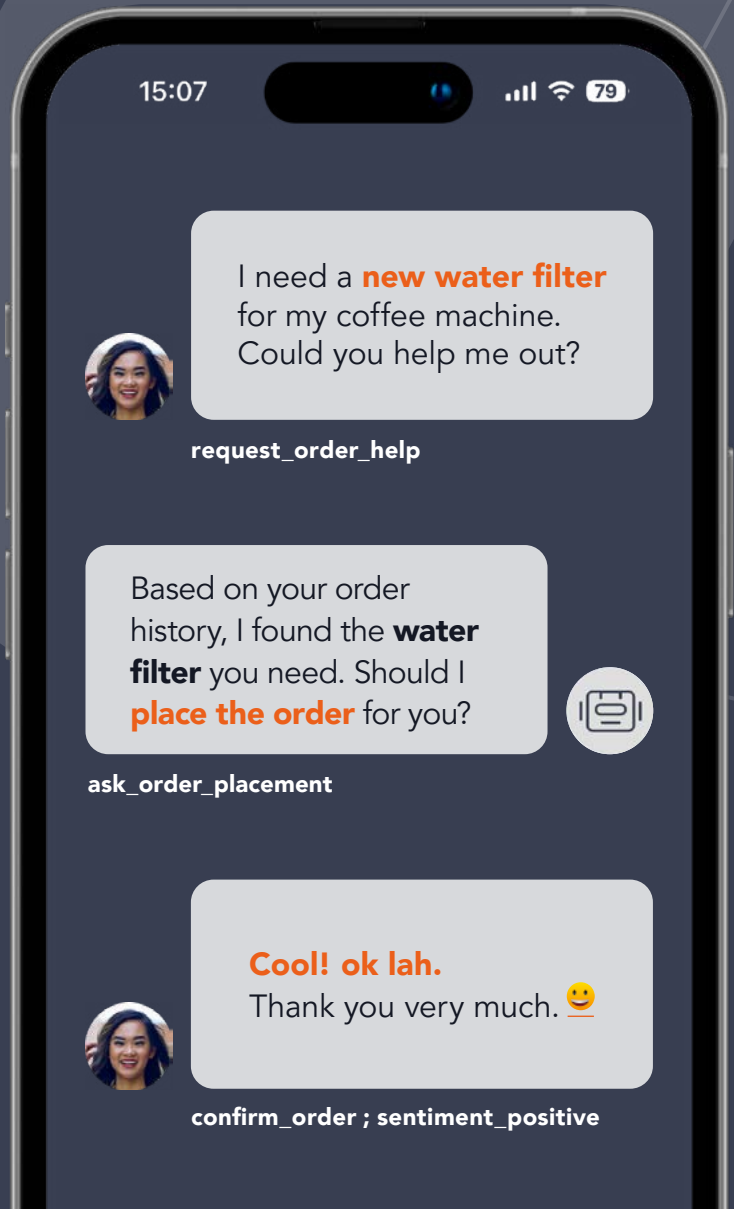
Empower teams to understand data intuitively with transparent analytics tools such as dashboard templates to find valuable insights needed to map customer journeys across channels, scale customer experiences and drive business forward.



# Conversational AI at work

When it comes to chatbots, the difference between a basic and an advanced one is significant. While a basic chatbot can only respond to specific pre-set commands, an advanced chatbot goes beyond that by understanding natural language, user intent, and sentiment. This advanced functionality allows the chatbot to provide personalized and empathetic responses, addressing the needs of the user directly.

In essence, an advanced chatbot is capable of cutting through the noise and getting straight to the point, making interactions with users more efficient and effective. By leveraging natural language processing and machine learning, advanced chatbots are able to learn from each interaction and continually improve their ability to provide helpful responses. This ultimately leads to a better user experience and greater customer satisfaction.



“novomind iAGENT AI utilizes the best of two worlds: powerful AI and rule-based algorithms. With this approach, we can achieve recognition and automation levels of 90% and higher while maintaining full control over the machine learning process.”



**Sven Tunnermann**

Deputy Head of iAGENT Product Development  
novomind AG

# Best of both worlds



## AI-BASED APPROACH

### Traditional Machine Learning Algorithms

- Building text classification models automatically from scratch with AutoML or manually with long-established algorithms

### State-of-the-art Deep Learning Algorithms

- Fine-tuning Transformer language models or individual customer service use cases like categorisation, sentiment analysis and text summarization
- Chatbots based on conversational AI
- Integration of external services like DeepL or Google Translate for machine translation

### Enhanced model training and deployment with popular cloud services

- Speech-to-Text recognition (STT) using Azure and Vosk

**novomind iAGENT AI:**  
The best tool for the so-called concept drift! Use of rule-based engine to quickly respond to and manage an unprecedented event, until the ML Model has enough data to adapt.



## RULE-BASED APPROACH

- Understanding the customers/users intent** with crafted expressions, which are defined within the novomind iAGENT Composer, our proprietary knowledge base

### Similar Words Service:

Automatically specifying entities with word resemblances based on cosine similarity between fast.ai word embeddings

### Automatic generation of regular expressions

using example sentences based on common NLP disciplines such as Named Entity Recognition (NER), Part-of-speech-Tagging (POS-Tagging), lemmatization, etc.

## Concept drift COVID-19 Pandemic



### What is Concept Drift?

Concept Drift means that statistical properties of the target variables change overtime. The "laws" underlying the data change. Thus, the model built on past data does not apply anymore.

### Case in point:

We helped to build a cloud-based chatbot for HanseMerkur Insurance Group during the Covid-19 pandemic to efficiently handle the unforeseen surge in reimbursement requests. This was achieved through activation of our rule-based engine within a couple of weeks as ML algorithms could not adapt to this sudden change of events without the available data.

# Use Cases



At R+V 24, fully-automated email processing was implemented with automatic responses for approximately 45 categories. The automated categories achieve a 100% accuracy rate.

#### Project details:

- novomind iAGENT in use since 2010
- 200.000 processed tickets per year
- Dynamic text modules (automated responses are also available for multi-topic email enquiries)
- Skill-based and priority routing to live agents for all other enquiries



The FRICKE Group is one of Germany's largest private groups of companies in the agricultural machinery sector: novomind iAGENT AI enables the processing of several thousand multilingual emails per day. Through automated routing, the mail module uses computer-linguistic and semantic procedures to analyze each request in seconds, assigning it to a specific team of specialists and thus ensuring efficient distribution. For simple standard requests, suitable text modules are automatically suggested.

"The intelligent automatic distribution of emails ensures optimal utilization and saves time during processing. In turn, our customers appreciate quick responses."

Head of Customer Center Silvan Schenk



At DEW21, the level of automation of email distribution has increased by 100%, response times to customer concerns are up by around 30%, whilst the clearance principle and internal service level contribute to quality assurance.

According to Robert Tigges, central complaints coordinator at DEW21: "Automated categorisation and skill-based distribution of incoming tickets enhanced the quality of our customer service. This enables us to be constantly aware of which ticket has the highest priority, which was one of our major goals."



With the aid of computer linguistic and semantic processes, novomind iAGENT analyses every customer enquiry in seconds, allocates them to a particular hotel or subject and forwards them with suitable text suggestions, optimised for marketing, to the relevant staff in the 24/7 service centre. In this way reservation enquiries are clearly separated from other subjects and can be answered even quicker than before. novomind iMAIL ensures an almost guaranteed 24 hour response to all enquiries, also during peak times.

"A win-win situation for all, our service level increases parallel to the number of guests and their loyalty to A&O."

A&O General Manager Oliver Winter

# About Us



novomind iAGENT is the intelligent contact centre software that combines all the latest digital channels such as chats, chatbots and video chats, messenger platforms, social media and email management with traditional channels such as voice calls. Modern customer service is managed through one single interface with novomind iAGENT. Always available, just like a friend.

[More information about novomind iAGENT](#)

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## Company

novomind AG is a German software developer of intelligent commerce and customer service solutions. The company was founded more than 20 years ago and has become one of the technology leaders in Europe. Its portfolio includes the commerce products novomind iPIM, iSHOP, iMARKET and the contact centre software novomind iAGENT. Its team of over 500 employees currently serves enterprise customers worldwide with offices in Hamburg, Dubai and Singapore.

[More information about our company](#)

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