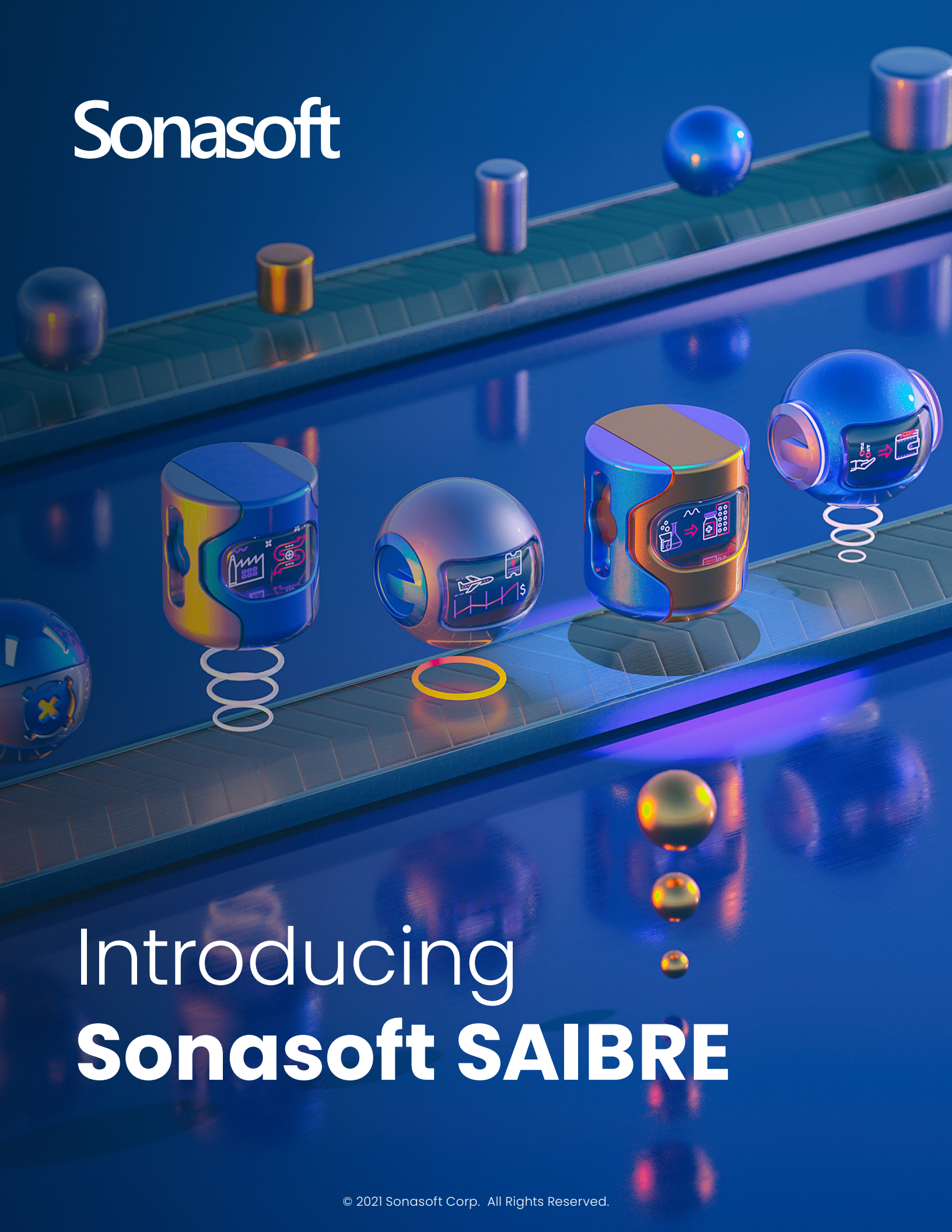
Sonasoft



Introducing
Sonasoft SAIBRE

AI is a disruptor, transforming business processes, bringing new opportunities, and helping companies leverage the vast oceans of data they collect. There are myriad use cases, from stock control and forecasting through to identifying efficiency savings in your back office processes. The problem is, AI projects need a team of highly skilled data scientists and engineers, along with access to significant computing power. Even then, a typical project will take around 9-10 months to complete. We offer a complete end-to-end AI solution, including skilled data scientists to assess your requirements, a world-class AI platform that creates models autonomously, and virtually maintenance free AI bots. The upshot is that we can offer you zero effort AI without any negative impact on your existing team and with no need to hire your own data scientists.

An AI 101

Artificial intelligence is the term for any computer system that is able to emulate some aspect of intelligence. Merriam-Webster defines intelligence as:

> the ability to learn or understand or to deal with new or trying situations.
> Also, the skilled use of reason.

At Sonasoft, we use a slightly different definition. Intelligence is knowing what to do next or in future, based on recently gained knowledge (knowledge of the present) and our experience (knowledge of the past).

Human intelligence is defined as a “general” intelligence. That is, we are able to apply our existing knowledge to solve completely new or abstract problems. We do this constantly, usually unconsciously. Most artificial intelligence is “narrow”. Typically, this means it only has a very specific application. As a simple example, a computer can be taught to recognize pictures of cats. But that same computer can’t recognize dogs, unless it is retrained.

Most AI is based on the concept of machine learning. Here, the computer is taught to recognize certain patterns in data. It then applies this learning to spot the pattern in new data. There are 3 forms of ML.

Supervised learning uses known, labelled data for training. E.g. you show a computer thousands of labelled photos of animals and teach it to identify the ones that are cats.

Unsupervised learning uses unlabelled data. The computer simply tries to identify any interesting patterns within the data. Typically, this might be used to identify clusters of similar data.

Reinforcement learning uses unlabelled data, but each time the computer identifies something correctly, it is "rewarded". This is rather like how a human infant starts to learn.

What AI can do for your business

There are numerous ways in which AI can transform businesses. Broadly, use cases fall into 3 classes: Anomaly detection, forecasting and planning, and knowledge discovery. There are other use cases, but they are less widely used. Let's look at each of these in turn and see what it takes to create a project.

Forecasting and planning

Many businesses rely on accurately forecasting future demand. This allows them to plan resource allocation, forecast profits, and streamline their business. Forecasting like this requires analyzing and modeling historical data and then extrapolating the model into the future. This can also be done in reverse. Given a future requirement, when do you need to get resources into place to meet it. Concrete examples of this include:

Inventory forecasting

Retail businesses need to order their inventory in advance based on their prediction of demand. It can then be distributed on-demand to each branch. However, if you get your predictions wrong, you end up sitting on a pile of unwanted stock, or risk disappointed customers. SAIBRE takes your historical data and combines it with key knowledge like weather forecasts and upcoming holidays. The resulting bot allows you to accurately forecast what to buy and when.

Demand forecasting

Utility companies are typically billed based on peak usage. The more power their customers consume, the higher the bills. If you can accurately forecast the peak in

advance, you can take steps to reduce it. SAIBRE lets you create accurate models that predict peak demand many hours in advance. These models combine historical data with advance knowledge such as weather forecasts, sports events and other key factors that influence demand.

Churn prediction

Many businesses rely on subscription-based pricing models. Customers pay a monthly fee and the overall revenue is measured in ARR (annualized recurring revenue). Imagine if you could predict customer churn properly? If you know in advance which customers are most likely to cancel their subscription you can send them targeted offers. You also have a much better understanding of future revenues. SAIBRE can take your historic data and create a precise user-by-user churn prediction model.

Classification models

Many AI problems are solved using classification models. These take a discrete data point and determine which of several categories it belongs in. The classic example here is image processing, such as computers deciding whether a picture shows a dog or a cat. However, there are many other commercial applications.

Lead scoring

Every salesperson knows how important lead scoring is. They don't want to waste effort chasing a lead that simply won't ever sign or won't bring sufficient revenues. But most lead scoring is done using simple heuristics such as BANT (budget, authority, need, time). By contrast, SAIBRE can analyze all your historic leads to create an accurate lead scoring model. This means you will be able to focus your sales and marketing where it matters most.

Credit scoring

Your credit score is one of the most important metrics in your financial life. Credit scores like FICO exist to allow banks to avoid bad loans. Yet, they are remarkably poor at predicting loan risk. Worse, they often penalize the best risks and create a perverse incentive to take out too many loans. With SAIBRE, you can create far more accurate credit score models that accurately classify whether someone is a good risk or not.

Continuous learning

Most AI bots are developed using historical data. These bots are really good at prediction, but they can't cope if your data constantly changes. Nor are they good at coping with sudden changes. One such example is the COVID-19 pandemic. At the start of 2020, most people would have predicted another boom year for the aviation industry. Instead, the pandemic saw air travel collapse to levels not seen in 40 years. Even the best models built with the latest AI may suffer because they can only use historical data for their forecasts. This is when continuous learning becomes important.

Revenue optimization

The eCommerce giants like Amazon have a number of tricks up their sleeve that allow them to maximize their revenues. One of the most important is elastic pricing. This means dynamically changing the price of products to reflect current demand and competition. This sort of revenue optimization typically requires huge datasets and advanced continuous learning models. But SAIBRE allows any retailer to take advantage, so long as they have accurate current sales data.

A typical AI project timeline

All the above forms of AI are applications of machine learning (ML). Creating an ML project is time-consuming and requires expertise. To give an example we will look at the steps needed to train a supervised learning model.

1. **Scope the problem.** The first step is to define the problem and understand if you have suitable data to work with. This stage will take several weeks to complete.
2. **Get the right data.** Now, you need to process your data to get your data into a form where it can be analyzed. This can be especially problematic with historical data since often the formats are different or could have changed over time. Again, this process will typically take weeks.
3. **Clean up the data.** At this stage, you need to pre-process the data. This includes cleaning, generating new features, filtering, and potentially manually labeling the data for supervised learning. This whole process is slow, and many enterprises tell us that preparing data for AI is one of their big challenges.

4. **Select ML models.** Having done this, your data scientists can start trying to find suitable ML models to analyze the data. Choosing the correct model is key, and it is often based on experience and gut instinct.
5. **Train and verify the model.** The next stage is to start training the model. For this, you need good quality training data. Typically, this means you need to further process the data you are analyzing. Most ML models involve 10-20 control parameters (called hyperparameters) which need to be iteratively fine-tuned to arrive at the best accuracy. Today, AutoML promises "Automated Hyper Parameter Tuning". However, these parameters are also dependent on other choices made in step 4, like embedding type, the scaler used to normalize data, the shape of the data, etc. This will take days to do, and typically, you will have to repeat the process many times.
6. **Validate the model is fit for purpose.** Finally, you will have a trained model and can test whether it is suitable for the job needed. Validation takes days to weeks, depending on the sort of task involved.

Overall, this process takes 8-10 months to complete, if it all goes according to plan. And the resulting model will be so specialized, it will only be applicable for a single function. If you want to adapt the model to do something else, you will often have to start from scratch.

The Sonasoft approach

Sonasoft employs experts in leveraging AI to extract meaningful business insights from your data. We offer a complete package and are able to condense your 8-10 month AI project down to just weeks. Our complete package consists of three key elements.

Data science

Getting your data into a suitable form for AI is often the hardest part of any transformation journey. Often, data is in an old format or is spread across multiple systems and databases. Our data science team can help sort all these data migration problems. We can also share our knowledge and advise you on what data you need to collect to achieve your requirements. Overall, our knowledge and expertise can save you months of wasted effort as well as saving you a fortune in hiring your own team.

SAIBRE

SAIBRE is our proprietary AI engine. SAIBRE differs from other AI engines in two key ways. Firstly, it offers a guided ML pipeline journey that allows you to quickly explore, experiment with, and deploy production ML bots. Then once those bots are in production, it provides an intuitive dashboard to give you complete visibility into your bots. This allows you to see how your bots are performing over time and even lets you automatically retrain them when necessary.

SAIBRE — the user-friendly AI platform

SAIBRE, the Sonasoft AI Bot Runtime Engine, gives users the easiest way to create and operate production AI bots. SAIBRE offers a number of unique elements:

- Guided ML pipeline journey with smart, real-time suggestions
- Visual drag and drop ML building blocks to create complete models
- Add your own code with our "bring your own code" feature
  - Full support for Python (R coming soon)
- At a glance bot monitoring gives you instant insight into how your bots are performing
- One-click deployment to Sonasoft infrastructure
  - Once you're happy with a solution, click "deploy"
  - Receive a direct URL for your bot
  - Receive code snippets so you can embed and access your bot from other applications and APIs
  - Continuously monitor the health and performance of your bot from the dashboard

Import

Take your raw data from any source

Identify

Work with us to choose a suitable bot

Train

Create and verify the AI models

Test

Check if the bot can give good results

Deploy

Deploy the final bot in our infrastructure

Data expertise

Sometimes, you may know what you want to achieve with AI but lack the appropriate data. In such cases, we can help you set up the data gathering you need. As your data is collected, we use SAIBRE to test various models and see if the data is suitable. Once you have enough data, we can then train a production model and deploy it for you.

The Sonasoft difference

Sonasoft's integrated AI solution stands out for three main reasons.

- **Industry and application agnostic.** Our AI solution can be applied to **any** use case, in any industry, with any sort of data. This helps us to stand out against the opposition. The flexibility of our approach is down to the expertise we have in data science, coupled with the unique way SAIBRE analyzes your raw data.
- **Simple and quick to learn.** SAIBRE is designed with users in mind. Most AI engines are tools to make life easier for data scientists. We hide that complexity and provide a tool that anyone and everyone can learn to use. The platform guides you as you create your model and makes it super-easy to deploy bots in production.
- **Uniquely powerful AI engine.** The underlying AI engine in SAIBRE applies our patent-pending approach to creating neural networks. These are the fundamental building blocks of the most powerful AI models. Our approach allows us to create much smaller networks without sacrificing accuracy. These work more efficiently, consume fewer resources, and are optimised for performance.

What does this mean for you and your team?

People are often worried about the impact of digital transformation projects on their team. All too often, solutions need ongoing support from engineering, constant maintenance, and disrupt daily operations. Sonasoft is different by design. Our whole ethos is making AI transformation as near to zero effort as possible. Let's look at what we mean by that.

Zero effort maintenance

AI is often portrayed as a one-shot solution. You build your model and then everything works for ever more. Sadly, the truth is that AI bots quickly get outdated. That's because their models are built using historical data. By definition, that data can't take account of significant events like the COVID-19 pandemic. Nor can it take into account how your business changes in reaction to the AI bot. The upshot is, you need to constantly revalidate your AI bots and retrain the models if needed.

Fortunately, SAIBRE allows us to create AI bots that require near-zero maintenance. The engine constantly monitors the health of your bots for you. It analyzes how the models are performing and checks whether other models might perform better. This allows it to spot when the models need retraining. When a bot does need retraining, you can do this with just one click.

Zero effort data science

AI transformation projects usually require a dedicated team of data science experts. That poses two problems. Firstly, it is really hard to find good experienced data scientists—they are in extremely short supply. Even if you find the perfect person, they may not have the necessary expertise to solve the problems you need. That means it will take them time to get up to speed. Secondly, good data scientists can command a very healthy salary. You are probably going to have to entice them away from their existing employer, who may be reluctant to let them go! The upshot is, building your own team could take you months and might well cost upwards of $1M.

Zero impact deployment

Engineering teams are typically rather cautious when they hear about great new tools that will transform the company. That's because usually they draw the short straw and end up having to do all the deployments and maintenance. This can be painful and time consuming. It probably means setting up their environment in a certain way, giving permissions to services they don't know and trust. It might even mean setting up some complex container orchestration.

We think that's dumb. We don't want your AI transformation to impact your engineering

team's productivity, so we do things a bit differently. SAIBRE allows us to deploy the bots on our own infrastructure. All your engineering team has to do is embed them using the URL we share. All monitoring and maintenance is done on the SAIBRE dashboard. If you need a new deployment, you just create one with one click.

Conclusions

Sonasoft's integrated solutions allow any business to leverage AI in just a few weeks. Moreover, our AI models are not limited to solving one problem. This makes our offering unique, and will save you months or even years of development effort. Add in the efficiency savings the AI models themselves bring and you get a truly transformative impact on your business.

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