IBM®

BRAINCREATORS

Business challenge
Artificial intelligence (AI) can augment human performance by shouldering tedious tasks such as monitoring physical assets, but many companies lack the resources to grasp the potential of AI solutions.

Transformation
Enter BrainCreators. Based on IBM® Power® Systems technology, the company's BrainMatter platform captures domain expertise to automate the monitoring of physical objects, with no AI knowledge required.

Business benefits:

€1,000,000s
of potential savings for companies in infrastructure, manufacturing and beyond

Boosts
productivity and quality by applying domain expertise rigorously and consistently

Keeps
people safe by enabling reliable remote asset inspection

BrainCreators
Infusing AI into asset monitoring to save time, cut costs, and boost accuracy

Established in 2016 by three entrepreneurs, BrainCreators specializes in intelligent automation. Its mission is to make AI accessible to all businesses, developed and driven by its team of machine learning and engineering experts.

"Companies are changing their digital agenda, and keeping their workforces safe and finding new efficiencies are top priorities. With BrainMatter powered by IBM they can achieve these goals and work more effectively."

Glenn Brouwer
Co-founder and CRO
BrainCreators

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Closing the gap

For many organizations, visual inspection of physical assets is an essential part of day-to-day business. For example, highly trained experts check for defects on manufacturing lines, roadway inspectors scan areas looking for damage, and facilities managers track fabric and machinery wear-and-tear.

And what do all of these (and more) industries have in common? Asset inspection can be time-consuming and tedious, and yet it's also critical to operations. The entrepreneurs behind BrainCreators saw an opportunity.

Glenn Brouwer, co-founder and CRO at BrainCreators, explains, "We thought: what if domain experts could teach their skills to an AI machine? The result could be better outcomes delivered in less time and less cost. But AI is out of the reach of many companies due to a lack of technical resources or knowhow. We set out to bridge that gap."

BrainCreators began building BrainMatter, a user-friendly software platform for automated inspection of physical objects. Crucially, BrainMatter is designed to be used by anyone, regardless of their level of AI knowledge.
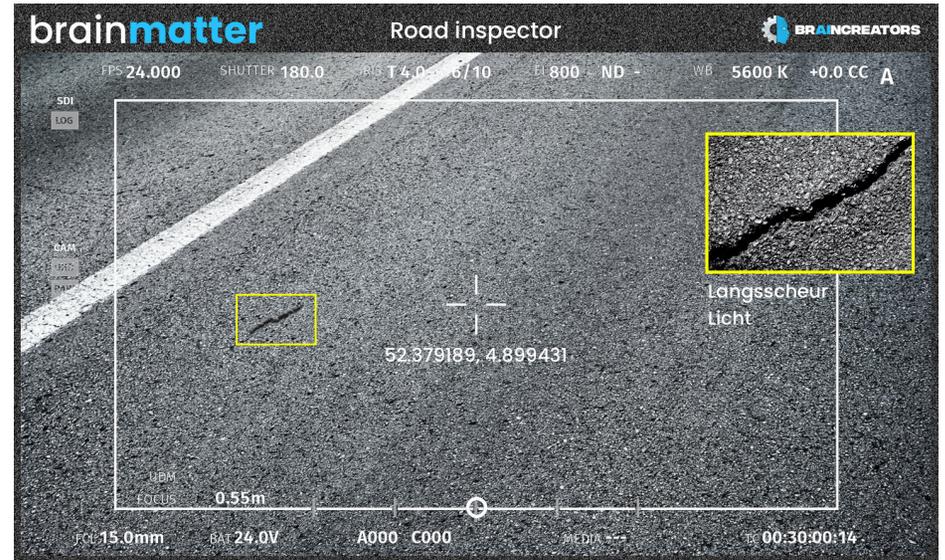
At the center of BrainMatter is the 'perceive, decide, respond' principle. The platform perceives reality by processing incoming visualizations such as images, videos, radars and scans. BrainMatter recognizes objects and assesses their physical state against a norm, and formulates a response based on defined rules. Responses can be anything from sending an alert to kicking off a repair process.

To bring the highly data-intensive BrainMatter solutions to life, the company looked for super-high-performance, ultra-reliable infrastructure.

Powering up BrainMatter

Today, BrainMatter runs on accelerated IBM Power Systems servers, giving BrainCreators the performance to build AI models for asset inspection and train them using thousands or even millions of images. The company tested multiple servers before making its decision.

"In our evaluation of the accelerated server market, IBM Power Systems emerged the clear winner," recalls Brouwer. "It combines NVIDIA NVLink with IBM CPU technology to make short work of data-intensive use cases. We were also attracted by IBM's leadership in AI, making them a natural partner for this endeavor."

BrainCreators offers BrainMatter as a subscription service in the cloud or as on-premises deployment, where its software is bundled with IBM Power Systems servers as an appliance.

In designing the BrainMatter architecture, the company took a page out of IBM's book. "We were inspired by the IBM-recommended architecture, opting for a containerized design built on Linux and orchestrated by Kubernetes," comments Brouwer. "We used Docker combined with components such as KubeFlow and Node-RED to build an end-to-end solution for intelligent automation that learns from examples and domain experts, and improves over time."

BrainCreators is also working with TechData, an IBM Distributor, to raise awareness and manage interest in the BrainMatter platform. Brouwer elaborates, "TechData are helping us set up our digital front-end. With TechData's support we've automated inbound marketing, enabling us to generate and capitalize on qualified leads."

Getting the best from people

BrainMatter augments the human role, helping employees work to their full potential, saving time, effort and cost, while driving up quality, accuracy and output.

If the solution finds that a segment falls outside the norm, the operations team is informed immediately via an automatic ticket within IBM Maximo® asset management software.

Jeroen Bleeker, Director at Unihorn, comments, "Thanks to the collaboration with BrainCreators, we have acquired innovative technology through the BrainMatter platform with which we can realize our visual road inspection solution," INSPECH ", together with our partners. As a result, road inspections are performed better, faster and safer at lower operational cost."

Similarly, BrainCreators is working with SPIE Nederland, a European leader in technical services for the energy and communications sectors. SPIE's domain experts in the field of real estate, infrastructure and industry will transfer their knowledge to BrainMatter by providing examples, helping the platform to learn their skills quickly. This enables SPIE customers to use AI without a degree in data science. In addition, SPIE will use BrainMatter to optimize its own services.

Jacco Saaman, Business Development and Innovation Director at SPIE, comments, "Thanks to the BrainMatter platform, we can simplify processes for our customers with smart technology and significantly reduce the costs for building and implementing intelligent automation solutions."

"Machines don't get tired and are great at repetitive tasks. People excel at creativity, awareness and emotional intelligence. We've combined IBM technology with BrainMatter to help humans and machines join forces, raising each other's games to produce better results."

Glenn Brouwer, co-founder and CRO, BrainCreators

In the wake of the COVID-19 crisis, BrainCreators' ability to support remote asset monitoring is proving especially valuable. Brouwer concludes, "Companies are changing their digital agenda, and keeping their workforces safe and finding new efficiencies are top priorities. With BrainMatter powered by IBM they can achieve these goals and work more effectively, a win-win outcome for everyone involved."

Brouwer explains, "Machines don't get tired and are great at repetitive tasks. People excel at creativity, awareness and emotional intelligence. We've combined IBM technology with BrainMatter to help humans and machines join forces, raising each other's games to produce better results. Companies also get to capture and preserve domain expertise, and make it available to both current and future employees, another big advantage."

Gaining traction

Supported by IBM infrastructure, BrainCreators is turning AI technology into accessible software for companies in the infrastructure, manufacturing and real estate sectors, and beyond.

In one example, BrainCreators teamed up with the infrastructure research and consultancy firm Unihorn to build an intelligent solution for visual road inspection. Typically, road inspections are labor-intensive and time-consuming, producing subjective results based on individual judgement. The high degree of manual work involved also makes them costly. In the past, it was considered too difficult to automate these inspections due to the variety and complexity of potential faults.

BrainCreators provided a solution powered by BrainMatter to detect damage to roads using photographs taken by a specially designed car. Using proprietary algorithms, it automatically classifies road surface segments to offer immediate insight into which sections are due for maintenance.

Take the next step

To learn more about accelerated IBM Power Systems servers, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/uk-en/it-infrastructure/power/accelerated-computing

To learn more about BrainCreators, visit: braincreators.com

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