

Media Information
12 December 2019

BMW Group shares AI algorithms used in production

- Company publishes algorithms on open source platform
- Global access for software developers
- Artificial intelligence frees up workforce

Munich. The BMW Group uses a growing number of artificial intelligence (AI) applications in production. For instance, AI relieves workers of monotonous tasks such as checking whether the warning triangle is placed in the right spot in the trunk. This task is now performed by a camera and self-learning software that compares the camera's live images with hundreds of stored images in milliseconds and can detect any deviations from the standard.

The BMW Group has now shared selected algorithms from this area of artificial intelligence on an open source platform (github.com/BMW-InnovationLab). The algorithms are part of various AI applications, in particular in automated image recognition and image tagging.

Making these publicly available allows software developers all over the world to view, change, use and improve the source code. "With the algorithms we are now publishing, the BMW Group has significantly reduced the development time for neural networks for autonomous transport systems and robots," says Dirk Dreher, Head of Logistics Planning. Neural networks independently compare live images in production and logistics with image databases to detect any deviations from the target state.

The open source approach benefits both interested software developers and the BMW Group. "We provide elements of our innovative digital image tagging software, which has proven effective in multiple AI applications; in turn, we receive support in taking our AI software to the next level of development. Also, this allows us to focus more strongly on advancing specific AI applications in production and logistics," comments Christian Patron, Head of Innovation, Digitalization, Smart Data Analytics.

Media Information

Date 12 December 2019

Subject **BMW Group shares AI algorithms used in production**

Page 2

“We are making major investments in artificial intelligence. By sharing our algorithms with the global developer community, we want to do our part and make AI accessible to a broad group of users. We expect the further open source development to lead to a rapid and agile advancement of the software,” adds Kai Demtröder, Head of Artificial Intelligence, Data Platforms at BMW Group IT.

In keeping with the open source approach, all users of the algorithms are guaranteed anonymity. Any flaws in the algorithms can be identified quickly; in this process, automated functions provided by the platform operators can also be used, if needed. For quality assurance purposes, the BMW Group checks all incoming user suggestions before they are put into productive use or shared. The model – in other words, the actual AI application being developed with these algorithms – always remains protected. All users are free to decide whether they want to make their models accessible to partners, such as suppliers.

If you have any questions, please contact:

Corporate Communications

Andreas Hemmerle, Communications Production Network BMW Group
Andreas.Hemmerle@bmw.de, Telephone: +49 89 382-21880

Sandra Schillmöller, Communications Production Network BMW Group
Sandra.Schillmoeller@bmwgroup.com, Telephone: + 49 89 382-12225

Internet: www.press.bmw.de
E-Mail: presse@bmw.de

The BMW Group production network

Strong customer demand and the launch of new models resulted in high capacity utilisation for the BMW Group’s production network in 2018. With 2,541,534 vehicles produced for the BMW, MINI and Rolls-Royce brands, production volumes reached a new all-time high. This figure included 2,168,496 BMW, 368,685 MINI and 4,353 Rolls-Royce units. The company’s German plants produced more than one million vehicles.

With its unparalleled flexibility, the leading-edge production system is in excellent shape for the future. Based on Strategy NUMBER ONE > NEXT, it is characterised by a high level of efficiency and robust

Media Information

Date 12 December 2019

Subject **BMW Group shares AI algorithms used in production**

Page 3

processes. The BMW Group's production expertise represents a decisive competitive advantage and contributes to the profitability of the company and its sustainable success.

Quality and speed of reaction are key factors in the BMW production system, as well as flexibility. Digitalisation, standardised modular concepts and intelligent composite construction testify to the high level of expertise within the production network. At the same time, the production system offers a very high level of customisation and allows customer specifications to be modified up until six days before delivery.

The BMW Group

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.

In 2018, the BMW Group sold over 2,490,000 passenger vehicles and more than 165,000 motorcycles worldwide. The profit before tax in the financial year 2018 was € 9.815 billion on revenues amounting to € 97.480 billion. As of 31 December 2018, the BMW Group had a workforce of 134,682 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

www.bmwgroup.com

Facebook: <http://www.facebook.com/BMWGroup>

Twitter: <http://twitter.com/BMWGroup>

YouTube: <http://www.youtube.com/BMWGroupView>

Instagram: <https://www.instagram.com/bmwgroup>

LinkedIn: <https://www.linkedin.com/company/bmw>