

Press Release
29 September 2020

Programming artificial intelligence for object recognition made easy – by the BMW Group

- BMW Group releases further AI algorithms
- Even users with no programming skills can create AI applications in no time
- Worldwide access not just for software developers

Munich. The BMW Group is releasing another software package that makes light work of creating artificial intelligence (AI) applications for object recognition. The core of the latest release (github.com/BMW-InnovationLab) is the so-called BMW Labeling Tool Lite. This tool allows for users to easily label objects in photos, an offline solution used in production to quickly create AI apps that reliably identify objects in photos.

The new release is influenced by important practical experience from the BMW Group's production network: "Smart AI solutions make the day-to-day work of our associates noticeably easier. Users need no longer worry about the underlying technology. The logic is the same as with a good smartphone app: easy to install, quick to understand, use it of your own accord. That's the only way a solution will quickly attract widespread use and become more effective," says Michele Melchiorre, Head of Production System, Planning.

Building an object-recognition app, even with no AI expertise, can be quick and straightforward to do, without having to programme any software. To train an app that suits their needs, production associates start with taking and labelling photos. The software then optimises itself independently and can distinguish between "right" and "wrong" after just a few hours, having worked through the labels. By comparing live images from Production, the app can recognise quickly and reliably whether the right parts have been used, for instance: as proven by an AI app for accurate recognition of up to 10 different BMW 3 Series Sedan door sill strips at BMW Group Plant Munich.

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“As well as supporting quality work in Production, this self-service for AI apps also offers particular benefits for the numerous Smart Transport Robots in Logistics at the BMW Group,” emphasises Dirk Dreher, Head of Logistics Planning.

Jimmy Nassif, Head of IT Planning Systems in Logistics, agrees: “With our software package, it takes just a few hours to build apps for comparing actual and target statuses.” Matthias Schindler, Cluster Supervisor for Smart Data Analytics in the production system, adds: “And there are countless possible uses for these apps.”

The published algorithms are freely available for software developers worldwide to use, view, modify and develop the source code further. These developments will also benefit the BMW Group. What’s notable about this now freely accessible software package is its simple, straightforward use based on plug & play. Users require neither programming skills, specific hardware or additional software; a standard powerful PC is enough.

The BMW Group already published selected algorithms from this area of AI back in autumn 2019. “The wealth of feedback on the algorithms we released in 2019 was overwhelming. Our BMW AI community is delighted with the appreciation we got from around the world. We are seeing useful enhancements based on our source code. That prompted us to publish more algorithms, to help open up AI for mainstream users,” says Kai Demtroeder, Head of Data Transformation, Artificial Intelligence in BMW Group IT.

With this latest release, the BMW Group is offering a complete solution for AI-based object recognition. Users who value high system stability will appreciate the additional functions such as failover and load balancing, which have now been added to the object-recognition interfaces (API).

The BMW Group employs a whole host of AI apps in Production and Logistics, as they make life easier for associates by taking over especially monotonous or tiring monitoring tasks.

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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

Artificial intelligence

The use of artificial intelligence (AI) as a key technology is an embedded element in the process of digital transformation at the BMW Group. The company already employs AI throughout the value chain, enabling it to generate added value for customers, products, employees and processes. "Project AI" is the BMW Group's centre of excellence for data analytics and machine learning. It ensures rapid connectivity plus knowledge and technology sharing throughout the company. "Project AI" therefore has a key role to play in the BMW Group's ongoing digital transformation and underpins the efficient development and scaling of new technologies. The BMW Group's D³ portfolio provides transparency on the use of technologies making Data-Driven Decisions (hence the name D³). It comprises over 400 use cases at present, more than 50 of which have already been made available for regular operation.

The BMW Group production network

Strong customer demand and the launch of new models resulted in high capacity utilization for the BMW Group's production network in 2019. With 2,564,025 vehicles produced for the BMW, MINI and Rolls-Royce brands, production volumes reached a new all-time high. This figure included 2,205,841 BMW, 352,729 MINI and 5,455 Rolls-Royce units. The company's German plants produced about one million vehicles.

The BMW Group's production system is characterized by unparalleled flexibility and a high level of efficiency, allowing for a swift response to changes in the markets and regional sales fluctuations. The BMW Group's production expertise furthermore contributes to the profitability of the company.

In its production network, the BMW Group applies innovative technologies relating to digitalization and Industry 4.0, including virtual reality applications, artificial intelligence solutions and 3D printing. Standardized processes and structures ensure that the production system always delivers products in the same premium quality. At the same time, the BMW Group offers customers a very high level of customization.

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.

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In 2019, the BMW Group sold over 2.5 million passenger vehicles and more than 175,000 motorcycles worldwide. The profit before tax in the financial year 2019 was € 7.118 billion on revenues amounting to € 104.210 billion. As of 31 December 2019, the BMW Group had a workforce of 126,016 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.

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