Commentary (//www.defensenews.com/opinion/commentary/)

Jump-starting Europe's work on military artificial intelligence

By: Heiko Borchert und Christian Brandlhuber   📅 1 day ago

As the United States, China and Russia are accelerating their use of artificial intelligence in military settings, Europe risks falling behind unless leaders on the continent take steps to bundle their efforts.

Estonia, Finland, France, Germany and the Netherlands presented a food-for-thought paper in May 2019, posing a series of questions aimed at boosting defense-relevant AI research in Europe.

Our suggestion: Create a data mobility framework that would guide future concepts, models, algorithms, data sharing, access to elastic computing power, and sophisticated testing and training.

Key challenges have yet to be addressed. Among them is a solid conceptual framework to help underline the benefits for armed forces. Second, AI solutions need to be integrated into a complex web of legacy systems, which puts a premium on interoperability. Third, defense AI solutions must comply with legal requirements. Finally, Europe lacks a common, trusted defense data pool.

European leaders should take a lesson from the military mobility project, which simplifies and standardizes cross-border military transport procedures to ease the movement of personnel and equipment. Europe needs to match physical mobility with digital mobility. Data needs to travel, too.

To stimulate defense AI solutions, the continent needs a platform economy that emerges around a portfolio of relevant infrastructure elements and services that a new "Center for Defense AI" could build.

For the platform to become attractive, the data acquisition strategy must focus on the need to share. Readiness to share must be incentivized by a data pool that offers true, added value. Therefore, the center would offer access to data on anything from missile defense to combat aircraft maintenance under strict, government-controlled regulation, enabling users to build novel use cases for military scenarios.

(https://www.c4isrnet.com/artificial-intelligence/2019/09/06/who-should-control-the-pentagons-ai-data-darpas-director-has-a-suggestion/)

Who should manage the Pentagon's AI data? DARPA's director has a suggestion. (https://www.c4isrnet.com/artificial-intelligence/2019/09/06/who-should-control-the-pentagons-ai-data-darpas-director-has-a-suggestion/)

Artificial intelligence can't be "owned" by any one entity at the Defense Department, said the head of DARPA. But there does need to be one central hub to manage all of the data supporting AI across the military, he added.

By: Jill Aitoro

Mission-critical systems cannot rely on a single machine-learning technology but require a combined approach to data fusion that increases reliability and reflects the specific requirements of the different domains like land, sea, air, space and cyberspace. In addition, data must be validated to avoid manipulation.

This data pool would become enormously attractive if the center managed to establish arrangements with the European Union and NATO to share data collected in international operations. This would provide an unprecedented opportunity to develop future concepts, models and algorithms based on real-life data reflecting mission requirements, environmental conditions in different theaters of operation and adversarial behavior.

In addition, the European Defence Agency and NATO's Science and Technology Organization should make use of the joint data pool for their defense AI projects, thus expanding the data pool as well as the concepts and models used for data curation and solutions development.

With the help of the European Defence Fund, the center could establish the first European defense data pool spanning across military services, missions and domains. This will drastically reduce data-handling costs, as data curation activities required for every single defense AI project can be pooled.

While hugely important, data is only a means to develop capabilities-based AI solutions. That's why the center would offer complementary services addressing two current shortfalls: First, commonly available computing capacity required for large-scale learning is somewhat novel to the defense industry. A new defense AI cloud would significantly enhance data mobility by offering elastic computing capacity up to supercomputer levels, and dedicated data fusion capabilities currently unavailable to train very large-scale, AI-based data fusion models.

Second, the center could provide a sophisticated simulation environment to run AI operations in a realistic battlefield environment. Based on its trusted data sources, the center and defense AI developers could join forces to build a defense AI app store. Apps could capture different sensor and effector characteristics or emulate particular patterns of adversarial behavior.

Defense contractors and defense procurement agencies could use these apps to verify and validate new AI systems as if they had access to the respective algorithms, but without exposing the original vendor to the risk of being reverse engineered.

In addition, the simulation environment would be instrumental to assess the ethical, legal and societal impact of AI solutions, thus providing a sound basis to decide on the use of AI systems and to enhance live, virtual, constructive training solutions.

Europe should take bold steps toward channeling its collaborative defense AI activities, building on the strengths of each partner: The center would offer joint services; defense AI developers could concentrate on designing and producing intelligent sensors, effectors and decision-making solutions, while military end-users would contribute capabilities-based thinking and operational experience.

Heiko Borchert runs Borchert Consulting & Research, a strategic affairs consultancy based in Lucerne, Switzerland. Christian Brandlhuber is senior adviser at Reply, a European IT systems integrator, and coordinates the company's AI strategy and activities.

Recommended for you

3 questions with the EU defense chief on Europe's future fighters

(http://www.defensenews.com/digital-show-dailies /dsei/2019/09/08/3-questions-with-the-eu-defense- chief-on-europes-future-fighters/?utm_source=clavis)

As Britain lurches toward Brexit, how will European security fare?

(http://www.defensenews.com/global/europe/2019/09 /08/as-britain-lurches-toward-brexit-how-will- european-security-fare/?utm_source=clavis)

US Navy makes a major breakthrough in autonomous weaponry

(http://www.defensenews.com/digital-show-dailies /dsei/2019/09/10/the-us-navy-just-had-a-major- breakthrough-with-autonomous-weapons /?utm_source=clavis)

Airbus claims $2B in savings if Australia sticks with Tiger helo amid replacement bids

(http://www.defensenews.com/industry/2019/09 /09/airbus-claims-2b-in-savings-if-australia-sticks- with-tiger-helo-amid-replacement- bids/?utm_source=clavis)

Around The Web

Comments

Most Watched Videos

Now that there's new Army leadership, what will change? (/video/2019/09/09/now-that-theres-new-army- leadership-what-will-change/)

New Army Chief of Staff Gen James McConville and Acting Secretary Ryan McCarthy sit down with Jen Judson to discuss the way ahead. (/video/2019/09/now-that- theres-new-army-leadership-what-will-change/)

Could the Air Force retire entire aircraft fleets?

▶ **Play Video**

(/video/2019/09/09/could-the-air-force-retire-entire-aircraft-fleets/)

New nuclear bomb delayed

▶ **Play Video**

(/video/2019/09/09/new-nuclear-bomb-delayed/)

Poland requests missiles & planes from the U.S.

▶ **Play Video**

(/video/2019/09/09/poland-requests-missiles-planes-from-the-us/)

Top Headlines (//www..com/)

✉ Newsletters (https://link.defensenews.com/join/5ba/sign-up)

📰 Subscribe (https://subscribe.defensenews.com/subscribe)   ✏ Got a Tip? (/news-tips)

✏ Contact Us (/contact)

(https://www.linkedin.com /company (https://twitter.com (https://www.facebook.com /Defense-news) /defensenews) /rss)

https://www.defensenews.com © 2019 Sightline Media Group

Not A U.S. Government Publication

Air (/air)   **Land (/land)**   **Naval (/naval)**   **Space (/space)**   **Cyber (http://www.fifthdomain.com?source=dfn-nav)**
C4ISR (http://www.c4isrnet.com?source=dfn-nav)   **Pentagon (/pentagon)**   **Congress (/congress)**   **Global (/global)**
TV/Video (/videos)   **Thought Leadership (/thought-leadership)**

Terms of Use	Get Us	Contact Us	About Us
Terms of Service (https://sightlinemediagroup.com /terms-of-service/)	Subscribe (https://subscribe.defensenews.com /subscribe)	Help & Contact Info (/contact)	About Us (/about-us)
Privacy Policy (/privacy) ()	RSS Feeds (/rss)	Advertise (/advertising)	Careers (https://boards.greenhouse.io /sightlinemediagroup?gh_src= ()
()	Newsletters & Alerts (https://link.defensenews.com /join/5ba/sign-up) ()	News Tips (/news-tips) ()	()

Military News (//www.militarytimes.com)   Air Force News (//www.airforcetimes.com)

Army News (//www.armytimes.com)   Marine Corps News (//www.marinecorpstimes.com)

Navy News (//www.navytimes.com)   Defense News (//www.defensenews.com)

Federal News (//www.federaltimes.com)   C4ISR (//www.c4isrnet.com)   Cyber (//www.fifthdomain.com/)

History (//www.historynet.com/)