Applied Intuition

"Trojan Horse: China's Auto Threat to America"

Hearing before the United States House Select Committee on Strategic Competition between the United States and the Chinese Communist Party

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Introductions

Chairman Moolenaar, Ranking Member Krishnamoorthi, and Members of the Committee, thank you for the opportunity to testify. As the co-founder and chief technology officer of Applied Intuition, I appreciate the chance to discuss the strategic importance of the American automotive industry and the challenges posed by the People's Republic of China's (PRC) rapid progress in this critical technology sector.

As our board member, Marc Andreessen, famously wrote, "software is eating the world."[1] We are already seeing this with artificial intelligence (AI) reshaping daily life through large language models like ChatGPT and Claude. The next wave of innovation and global competition will come as artificial intelligence moves off our screens and into the physical world, especially into vehicles. By the end of the decade, most new vehicles will no longer be just machines that move people and goods; they will be platforms for autonomy, AI, and data. As a third-generation automotive engineer born and raised in Detroit, I understand the central role the automotive industry has played in our nation's history and how closely it is tied to America's future economic resilience and national security.

During World War II, the American automotive sector retooled overnight to become what President Roosevelt called the great "Arsenal of Democracy," producing the trucks, tanks, ships, and aircraft that helped defend freedom for the world.[2] We now face a new generational

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[1] Wall Street Journal, "Why Software is Eating the World," 2011,
https://www.wsj.com/articles/SB10001424053111903480904576512250915629460.
[2] Franklin D. Roosevelt, "Fireside Chat 16: On the 'Arsenal of Democracy,'" December 29, 1940, The American Presidency Project, University of California, Santa Barbara.

challenge: a global competition among engineers and innovators to shape the future of mobility in the 21ˢᵗ century. To prevail, we must unite Detroit's manufacturing strength with Silicon Valley's innovation and speed to ensure that AI, autonomy, and software-defined vehicles are developed and built in America. The PRC fully understands the strategic nature of this industry, and its state-led efforts are intended to outpace the United States' capabilities with direct implications for our industrial base and national security. My testimony will focus on where the United States stands in this competition and how Congress can help ensure continued American leadership in automotive innovation.

Eight years ago, I co-founded Applied Intuition with our CEO, Qasar Younis. What began as a small startup has grown into the leading physical AI company, shaping how intelligent machines are produced, tested, and deployed. Applied Intuition quickly achieved commercial success by first serving the automotive industry, where today almost all global non-Chinese automakers use our products and services. We also recognized early that the software reshaping the automotive industry would be critical to other strategic and safety-critical industries. Building on a multi-domain software platform, Applied Intuition expanded into trucking, mining, construction, agriculture, and defense. Today, our dual-use software supports autonomous platforms across air, land, and sea for the Department of War (DoW).

Applied Intuition is building a suite of technologies that gives machines the ability to think, move, and collaborate intelligently across commercial and defense applications. Our end-to-end software platform integrates three core product lines: *Tools for vehicle intelligence*, which provide simulation, testing, and validation environments for advanced driver-assistance and autonomous systems; the *Self-Driving System* (SDS), a modular autonomy system for on- and off-road applications; and *Vehicle OS*, the foundational electrical and software architecture that enables seamless, over-the-air updates and software-defined functionality in vehicles. In simple terms, we build software that rapidly and continuously improves vehicle capabilities and performance, much like how your smartphone improves with every software update. These core technologies are advancing quickly in the West, but China is moving just as fast to build competing systems that threaten to outstrip American innovation.

The American Automotive Industry and U.S. National Security

The modern autonomous vehicle (AV) sector grew out of the Defense Advanced Research Projects Agency (DARPA) Grand Challenge in the mid-2000s. This was the first significant

effort that pushed unmanned vehicles out of controlled lab settings and into unpredictable real-world terrain by bringing together teams of students, professors, and industry engineers. The competition challenged teams to build systems that could sense terrain, classify obstacles, plan routes, and make decisions at speed, all while operating independently over long desert courses.[3] The Grand Challenge inspired a generation of engineers who went on to form the core of today's leading autonomy companies, university labs, and defense programs. The lessons and technical breakthroughs from those races laid the groundwork for both the commercial self-driving industry and the defense community's push to field trusted autonomous systems across air, land, sea, and space.

Today, the automotive industry is undergoing a once-in-a-century transition from being hardware-centric to software-centric. Performance is no longer driven primarily by engines, chassis, and transmissions but by software. AI allows these vehicles to perceive their surroundings, adapt to driver preferences, and improve with every update. Automobiles are the most complex machines most Americans ever own, and they are built at a scale that requires continuous advances in materials, software, and systems engineering. For most Americans, their car will soon become the most tangible and trusted expression of AI in daily life, an intelligent machine that not only transports them but learns from them. The result will be safer roads, more efficient transportation, and a new platform for innovation across mobility and national security. It will shape how people interact with AI more broadly, set expectations for reliability and trust in autonomous systems, and create a foundation for the technologies that will power everything from logistics to defense.

Automotive and defense autonomy are converging around the same core technologies. The perception, simulation, and decision-making software that enables a commercial vehicle to navigate safely in traffic is built on the same foundations needed for unmanned ground vehicles, autonomous aircraft, and maritime systems. Advances in automotive sensors, compute platforms, and validation tools are reducing costs and accelerating innovation for the defense community, while defense programs push the limits of robustness, security, and performance in contested environments. This shared technology base means progress in one sector strengthens the other, creating a cycle of innovation that supports both U.S. industrial competitiveness and national security. Trusted by the DoW and leading global automakers, Applied Intuition delivers mission

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[3] Defense Advanced Research Projects Agency (DARPA), "Grand Challenge: Ten Years Later," 2014, https://www.darpa.mil/news/2014/grand-challenge-ten-years-later.

and commercial critical solutions that bring Silicon Valley speed to both government and commercial customers.

Applied Intuition is helping redefine how modern vehicles are designed, built, and upgraded across both the commercial and defense sectors. Applied Intuition recently partnered with a major global automotive manufacturer to build vehicle-intelligence software that can be deployed across its fourteen brands, including several iconic American brands. This is a partnership that reflects how central United States software has become to the future of the sector. Applied Intuition's industry-leading technology will bring "cabin intelligence" to vehicles, making the driver's interactions with the car more seamless, intuitive, and ultimately safe. This dual-use technology has direct implications for national security and can greatly enhance the performance and reduce the cognitive load for pilots, tank operators, and ship captains. In addition, we have partnered with a European manufacturer to develop a clean-sheet vehicle electrical and software architecture that enables continued software updates and improvements throughout a car's full life, and this same technology can turn tanks, planes, and ships into software-defined platforms.

Physical AI is also transforming the industrial sector, with profound implications for worldwide infrastructure. In Asia, Applied Intuition has partnered with a leading global manufacturer of construction and mining equipment to develop a unified autonomy and software-defined vehicle platform that underpins all their vehicles. As this Committee has thoroughly investigated, the United States and our allies remain dependent on the PRC for the critical minerals that drive both economic competitiveness and national security.[4] The PRC controls roughly 70 percent of global rare-earth mining and up to 90 percent of rare-earth refining capacity, giving Beijing significant leverage over the inputs critical to AVs and defense systems.[5] The PRC has reinforced this position with at least $57 billion in state-supported subsidies to hold a global advantage on rare earth supply chains and undercut foreign competitors.[6] Meeting this challenge will require closer coordination with allies and greater investment in innovation across the U.S. mining sector.

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[4] The Select Committee on the CCP, "Predatory Pricing; How the CCP Manipulates Global Mineral Prices to Maintain its Dominance," November 12, 2025,
https://selectcommitteeontheccp.house.gov/sites/evo-subsites/selectcommitteeontheccp.house.gov/files/evo-media-document/china-interim-report-on-price-manipulation-w.toc-compressed.pdf
[5] Council on Foreign Relations, "China, the United States, and Critical 'Chokepoint' Minerals,"
https://www.cfr.org/article/china-united-states-and-critical-chokepoint-minerals.
[6] Brooke Escobar et al., Power Playbook: Beijing's Bid to Secure Overseas Transition Minerals (AidData at William & Mary, Jan. 28, 2025),

The United States needs to create consistent regulatory frameworks for AV production. Japan offers a useful reference point. Applied Intuition is partnering with a global commercial automobile manufacturer in Japan to deploy Level 4 autonomous trucks in the commercial sector, underscoring how quickly autonomy is reshaping logistics when regulatory expectations are clear. Japan's approach demonstrates that it is possible to allow safe testing and scaled deployment of autonomous trucking under a unified national framework, something the United States still lacks. In 2024, approximately 70 percent of all U.S. freight moved by trucks, and trucking is the essential final link in the American supply chain. The DoW relies on trucks to move materiel, personnel, and weapon systems between bases and into theater.[7] The DoW has recognized this need and established the Army's Ground Expeditionary Autonomous System (GEARS) program to make fleets of trucks autonomous, noting that "vehicles have been reliant on human operators, who face natural limitations such as the need for rest, vulnerability to fatigue, and variability in training."[8] The Army's recent reform of Portfolio Acquisition Executives reflects a broader recognition that the DoW needs to deploy autonomous systems faster and depends on a competitive U.S. industry to deliver this capability to the warfighter. Adopting a coherent national framework is essential if the United States wants to match the speed of global innovation and secure the logistical advantages that autonomy will define in the years ahead.

Applied Intuition is now leading efforts to bring commercial automotive technology full circle back to the DoW across ground, aerial, maritime, and space domains. Earlier this year, we were honored to host the Secretary of the Army, the Honorable Daniel Driscoll, and the Chief of Staff of the Army, General Randy George, at our headquarters in Silicon Valley. We walked them through production vehicles running advanced autonomy, driver-assistance, cabin intelligence, and VehicleOS capabilities. As they moved through the garage, they both asked a simple question that cut to the heart of the issue: if this technology is already proven in commercial vehicles, why isn't it on Army platforms? They asked how long it would take to make an Army vehicle drive autonomously and we replied "we could do it in ten days." The next morning, an Army general called to say an Infantry Squad Vehicle (ISV) was already on a flatbed truck headed to our Silicon Valley office. The Army wanted to test if we could deliver on that promise. Our engineers immediately got to work and six days later, the ISV was driving autonomously

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[7]American Trucking Associations, "Economics and Industry Data," https://www.trucking.org/economics-and-industry-data.
[8] Defense Innovation Unit, "GEARS Project Brings Autonomy to the U.S. Army's Sustainment Fleet," 2023, https://www.diu.mil/latest/gears-project-brings-autonomy-to-the-u-s-armys-sustainment-fleet.

off-road in the Southern California mountains. Two weeks after that, soldiers from the 101st Airborne at the Joint Readiness Training Center at Fort Polk, Louisiana were successfully testing it in the field.

Applied Intuition moved this fast because we leaned on years of expertise in Silicon Valley software development and validation in the automotive industry that transfers directly to the defense sector. This mindset carries across our work with the DoW. For the United States Navy, we have retrofitted Arleigh Burke-class destroyers with computer vision systems to support AI-enabled automated target recognition. For the U.S. Air Force, we were the only company permitted last year to fly an autonomous F-16 in a high-aspect merge with the Secretary of the Air Force sitting in the front seat.[9] In addition, we are assisting our close allies like the United Kingdom to build autonomy capabilities that strengthen U.S. and allied posture. The British Army is currently scoping the requirements of a similar retrofit of autonomy on its existing ground vehicles, looking at both traditional military and civilian vehicles. The lesson is straightforward: when we connect commercial innovation to defense requirements, we can deliver meaningful capability to warfighters at the speed of relevance.

Chinese Automotive Industry

China is now the United States' strongest competitor in the global automotive technology race, building an industry that can innovate at speed, produce at scale, and embed connected systems with strategic consequences far beyond the commercial market. Applied Intuition does not work with Chinese automakers but we regularly benchmark our products against Chinese manufacturers at global automotive shows in Beijing and Shanghai. Only a few years ago, many Chinese companies were producing copies of American and European automotive designs. However, today the Chinese are producing original, high-quality vehicles that rival and often exceed the best offerings from the United States and Europe. Some Chinese automakers are selling software-defined, connected vehicles for as little as $10,000, roughly one-third the cost of comparable American models.[10] China's rapid progress is due to significant state subsidization, long-term and coordinated industrial policy, supply-chain dominance, and investments in science and engineering talent. The result is an intensely competitive Chinese domestic market with

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[9]Courtney Albon, "Applied Intuition Acquires AI Software Firm Epistemic AI," Defense News, February 6, 2025, https://www.defensenews.com/air/2025/02/06/applied-intuition-acquires-ai-software-firm-episci/.

[10]Reuters, Tesla's Self-Driving Bid in China Faces Rivals Racing Ahead, April 30, 2024, https://www.reuters.com/business/autos-transportation/teslas-self-driving-bid-china-faces-rivals-racing-ahead-2024-04-30/.

more than 100 manufacturers racing to out-innovate one another.[11] Further, the PRC's long-term investments in STEM talent have produced a highly competitive and disciplined workforce, particularly in software development. I have seen this firsthand in the prevalence of the "996" culture, where many Chinese engineers routinely work from 9 a.m. to 9 p.m., six days a week.[12]

Beijing is displacing western automakers out of its domestic market and is using industrial policy strategy to flood foreign markets with low-cost, networked vehicles.[13] This is creating a global physical AI footprint that cannot simply be surgically removed like Huawei equipment out of 5G networks. China exported roughly six million vehicles in 2024, about three times the volume of U.S. exports, making it the world's largest automotive exporter.[14] Further, European automakers now face the risk of being displaced in their own markets, as BYD's new factory in Hungary is slated to begin mass production in 2026, enabling it to localize supply chains, circumvent tariffs, and undercut European manufacturers.[15] An investigation by the European Commission found that Chinese vehicle exports have flooded Europe–jumping by over 1,600 percent from 2020 to 2023–and have entered the European market at an average import value roughly one-third below comparable non-Chinese imports.[16]

A parallel warning comes from the United Kingdom, a critical U.S. ally, which has already experienced the risks of relying on Chinese-built connected vehicles. Between 2020 and 2024, hundreds of buses supplied by Yutong and other Chinese manufacturers entered service across major UK cities, including London, Manchester, and Birmingham.[17] Security reviews later found that these vehicles contained remote software-update systems and data-collection modules supplied through Chinese cloud and hardware vendors. UK intelligence officials warned these systems could create access points into municipal networks, transportation management systems, and real-time mobility data.[18] In response, the UK government has begun reassessing procurement of Chinese-made connected vehicles, issuing new risk guidance, and pausing some

[11] The Economist, "The brutal fight to dominate Chinese carmaking," The Economist, September 15, 2025, https://www.economist.com/business/2025/09/15/the-brutal-fight-to-dominate-chinese-carmaking.

[12] Reuters, *China Tries to Call Time on Its '996' Culture of Long Hours,* September 1, 2025, https://www.reuters.com/sustainability/society-equity/china-tries-call-time-its-996-culture-long-hours–ecmii-2025-09-01/.

[13] *"How China Left Europe in the Dust in the Electric Car Race," The European Conservative,* August 6, 2024. Available at: https://europeanconservative.com/articles/analysis/how-china-left-europe-in-the-dust-in-the-electric-car-race.

[14] Eurostat, *EU Exports of Passenger Cars,* April 1, 2025, https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20250401-1; Statista, *Automobile Exports from China, 2019–2024,* https://www.statista.com/chart/32019/automobile-exports-from-china/; U.S. International Trade Administration, *U.S. Vehicle Export Data,* 2024, https://www.trade.gov/automotive-industry-united-states

[15] BYD, "BYD to Build a New Energy Passenger Vehicle Factory in Hungary for Localised Production in Europe," "https://www.byd.com/eu/news-list/BYD_to_Build_A_New_Energy_Passenger_Vehicle_Factory_in_Hungary_for_Localised_Production_in_Europe"

[16] EU's Drive on China: What EV Tariffs Mean for Europe, Centre for European Reform, September 2024

[17]UK House of Commons Library, "Introduction of UK-Made Zero-Emission Buses," Debate Pack CDP-2024-0097, May 17, 2024, https://commonslibrary.parliament.uk/research-briefings/cdp-2024-0097/.

[18]Dan Sabbagh, "UK Transport and Cyber-Security Chiefs Investigate Chinese-Made Buses," The Guardian, November 10, 2025, https://www.theguardian.com/uk-news/2025/nov/10/uk-transport-cyber-security-chiefs-investigate-chinese-made-buses.

future procurement while cyber authorities conduct deeper technical evaluations.[19] The UK experience shows how quickly the adoption of low-cost Chinese platforms can create strategic national security vulnerabilities, even in countries with advanced cybersecurity institutions.

Light Detection and Ranging (LiDAR) is a critical technology for AI-enabled commercial and defense vehicles, and China's low-cost, high-volume producers now dominate and shape this market. The National Aeronautics and Space Administration (NASA) and private industry pioneered this technology in the 1960s, yet the United States has again fallen behind in a technology it invented. Chinese automakers are bringing LiDAR, once limited to luxury models, into mid-priced vehicles; the sensor technology is now standard or widely available on Chinese models in the 100,000–150,000 yuan ($14,000–$21,000 USD) range. Hesai's automotive LiDAR for advanced driver-assistance systems is priced at about $200 per unit, while leading Western sensors are closer to $500, and many U.S. and European automotive-grade units still range from roughly $500 to $1,000 at volume. This development places the United States in a perilous position because LiDAR is not only a commercial technology but also a critical sensor for defense autonomy and precision navigation. China's cost and scale advantage therefore gives its automotive companies an edge in global markets while strengthening the PRC's broader position across dual-use autonomous systems supply chains. U.S. leadership in LiDAR is essential to the future of autonomous and software-defined vehicles, and Congress should help ensure that domestic companies remain at the forefront of this technology.

Once these machines are on the roads, unwinding that dependence will be slow, costly, and politically difficult, which is why action is needed before that position is locked in. For U.S. automakers, the challenge is twofold: defending global market share and maintaining competitiveness with consumers who now expect low-cost, highly-connected, and increasingly AVs. The risk to U.S. leadership is not only economic but strategic at the highest level. Chinese AVs operating around the world are collecting enormous volumes of mobility, routing, and behavioral data that can be exploited for surveillance, intelligence gathering, or coercive leverage. Chinese-connected vehicles pose the same kind of pervasive data and influence risk in the physical world that TikTok represents in the digital world, potentially making them the TikTok of physical AI. Under the PRC's civil-military fusion strategy, every commercial advance in autonomy directly accelerates the military capabilities of the People's Liberation Army. If left

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[19] UK Probes Security Risks of Chinese Electric Buses, The Register, Nov, 2025
https://www.theregister.com/2025/11/11/uk_probe_china_bus_claim/.

unchecked, it threatens to shift the balance of power in both the global automotive industry and the next-generation of military technology.

Recommendations

1. **View the automotive industry as a national security imperative:** Congress should treat the automotive industry as a strategic sector vital to America's economic and national security. Congress should set a national agenda and develop model legislation to strengthen the health, viability, and competitiveness of the automotive sector as a strategic industry. A whole-of-government approach, including tools like the Defense Production Act, may be needed to restore U.S. leadership. Congress should encourage and incentivize the industry to prioritize innovation and long-term competitiveness.

2. **Encourage modular, software-defined manufacturing:** Legacy manufacturing models are slow to adapt and vulnerable to supply-chain shocks. Modular, software-defined manufacturing enables faster updates, interchangeable components, and greater resilience. Congress can accelerate this transition through public-private research partnerships and tax incentives tied to adoption of advanced manufacturing methods.

3. **Secure U.S. Supply Chains:** The U.S. automotive industry remains dependent on China for critical components such as semiconductors, LiDAR, and rare earths. The pandemic showed how quickly disruptions can cripple production. Congress should expand incentives for domestic manufacturing of these inputs to reduce strategic vulnerabilities.

4. **Strengthen Coordination with Allies:** The United States should work with partners such as Germany, France, the United Kingdom, Japan, and South Korea to align export controls, technical standards, and shared safeguards. These countries have deep automotive expertise and shared security interests, and closer coordination will help reinforce a resilient, democratic supply chain.

5. **Invest in a world-class domestic workforce:** Congress should expand funding for STEM education to train the next generation of engineers and strengthen apprenticeship

and community college programs to build a workforce capable of producing critical components at scale.

6. **<u>Streamline federal regulation:</u>** Today the automotive and trucking industry face a patchwork of state rules on AVs. This uncertainty deters investment and slows innovation and deployment. Congress should establish clear, nationwide standards that provide long-term clarity for innovation and manufacturing.

7. **<u>Enhance U.S. Civilian-Military Integration:</u>** This Committee has highlighted the need for faster defense acquisition. The U.S. defense industrial base was built on dual-use innovation, with thousands of commercial firms contributing to national security. Congress should continue to expand programs like the Agile Acquisition Framework, strengthen the Defense Innovation Unit, and surge funding for autonomous systems. Commercial and defense innovation reinforce one another: Applied Intuition's commercial expertise has enabled us to deliver more affordable solutions to the DoW, while lessons learned in defense have accelerated our advancement in automotive technology.

<u>Conclusion</u>

In closing, the United States stands at a crossroads. With the right investments in research, manufacturing and workforce development, we can lead the world in next-generation vehicle technology, strengthen our economy, and safeguard our national security. If we fail to act, China will define the standards and dominate the markets that shape the future of mobility. The path forward is within our control, but it requires urgent, deliberate action from all of us to ensure that the vehicles of the future are designed, engineered, and built right here in the United States. Thank you again for the opportunity to testify, and I look forward to your questions.