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Hearing: "Less Hype, More Help: AI That Improves Safety, Productivity, and Care"

Statement before the

Subcommittee on Science, Manufacturing, and Competitiveness

Committee on Commerce, Science and Transportation

United States Senate

Washington, D.C.

March 3, 2026

Thank you Chairman Budd and Ranking Member Baldwin for inviting me to speak to you today. And thank you as well to Full Committee Chairman Cruz and Ranking Member Cantwell, and all the other Members of this subcommittee.

I'd like to open with a quote from Peter Pan: "All this happened before, and it will happen again."

The United States first started collecting census data on agricultural employment in 1820, almost exactly 200 years before Agility Robotics launched its humanoid robot. In 1820, the vast majority of Americans worked on farms, using simple tools and assisted by animals. Over the next 200 years, agriculture employment shrank to about 2% of the overall workforce. This is not, however, a story of decline. Absolute employment - the number of total Americans working in agriculture - has actually *increased* by almost 30% since the 1820's. Why? In a single word: technology. In the 50 years after the patenting of the McCormick Reaper in 1834, nearly 12,000 additional farm implement patents were filed. Far from destroying jobs, automation in agriculture expanded both direct agricultural employment, and unlocked truly staggering growth in the United States: a 30x increase in population and a 40x increase in per-capita GDP. The modern AI and robotics boom promises to bring these sorts of transformative changes to the rest of our economy.

Agility Robotics was started in 2015, as a spin-off from Oregon State University. From our DARPA-funded academic roots, we've grown to more than 300 employees primarily in Oregon, Pennsylvania, and California. Our Oregon facility co-locates both our R&D teams and our factory – RoboFab, and 100% of our robots are assembled in the USA. Our humanoid robot, Digit, was launched in 2020 as the first full-size humanoid robot available for purchase. Our customers include warehouse and logistics work (Amazon, GXO, and Mercado Libre) and manufacturing and automotive (Schaeffler and Toyota), with the common theme of providing a solution for repetitive material handling tasks alongside human coworkers.

I'd like to address the impact of automation on jobs and human workers. Many manual labor jobs in the US are facing pressure from an aging workforce, high turnover, and a high injury rate, which is where Agility has focused its deployments. The Bureau of Labor Statistics projects average annual vacancies of more than one *million* positions in warehouse manual labor roles. Each robot deployed here not only doesn't take a job from a human, it enables the business to grow and expand overall hiring elsewhere in the organization. To cite one example from an Agility partner: in 2012, Amazon employed about 88,000 people and acquired the robotics startup Kiva. Over the next 13 years, they deployed more than a million robots, while hiring an additional 1.4 million people.

Prior to the modern AI boom, it took a skilled engineer many months to develop a new application for the robot. Modern AI can dramatically shorten the time to deployment for the

small and medium-sized businesses that desperately need to solve labor challenges but lack the technical and financial resources to run their own IT department. However, as we've seen with self-driving vehicles, safety often lags behind technical ability. It's imperative that robots not endanger their human colleagues, members of the public, or our homes and workplaces. Focusing first on controlled environments has allowed Agility Robotics and our partners like Boston Dynamics to focus on developing responsible, industry-led safety standards for robots in the workplace. Gaining experience in these environments first, with a focus on continuous safety improvement and industrial best practices, is the fastest and most responsible path towards a successful long-term buildout of general-purpose automation. As an industry, we owe the general public a solid safety argument backed by data.

I'll conclude by briefly addressing the challenges posed by China's extremely rapid progress in humanoid robotics. To be as blunt as possible: they're doing a good job. Their technology is well designed, highly capable, and backed by a formidable supply chain. Two recent papers by security researchers have identified a critical security vulnerability in a Chinese humanoid robot allowing for remote takeover, as well as a "phone home" data logging mechanism that sends continuous operational data to a remote server. As of this week, that robot is available for sale in the US for less than $20,000. Combined with open source and open weight AI models, China is creating a compelling value proposition for early adopters of general-purpose humanoid robots. This is a siren's call that we would be well served to take seriously, or risk ceding the future of automation, and by extension continued economic growth, to others.

Thank you again for the opportunity to speak today, and I thank you for this committee's focus and leadership on these important issues, including the regulatory sandbox approach. Agility Robotics is ready to help the US solve its labor challenges, expand the economy, and ensure American competitiveness and economic security as we move into the next industrial revolution.