

KINOVA CASE STUDY

MATHWORKS



OPEN ROBOTIC ARM
CUSTOMIZATION FOR
PRODUCT DEMONSTRATION

KINOVA

Achieve Extraordinary



THE CHALLENGE



Many years ago, **Mathworks**, a Massachusetts-based mathematical computing software company, was looking to have custom robot arms built that could be easily programmed to showcase any of their engineering and scientific tools. To accomplish this, the company wanted to establish a mutually beneficial partnership with a robotics developer that could tailor its own mechanical products to meet the needs of **Mathworks'** customers — namely, researchers across academia and various industries.

Most important of all requirements was that **Mathworks** wanted product demos portable enough to transport to conferences and trade shows around the world. Thus, the company required an ultra-light-weight robotic arm that had the right accessors and processing platforms, as well as the right interface to perform low-level control, in order to give them complete flexibility.



THE APPROACH



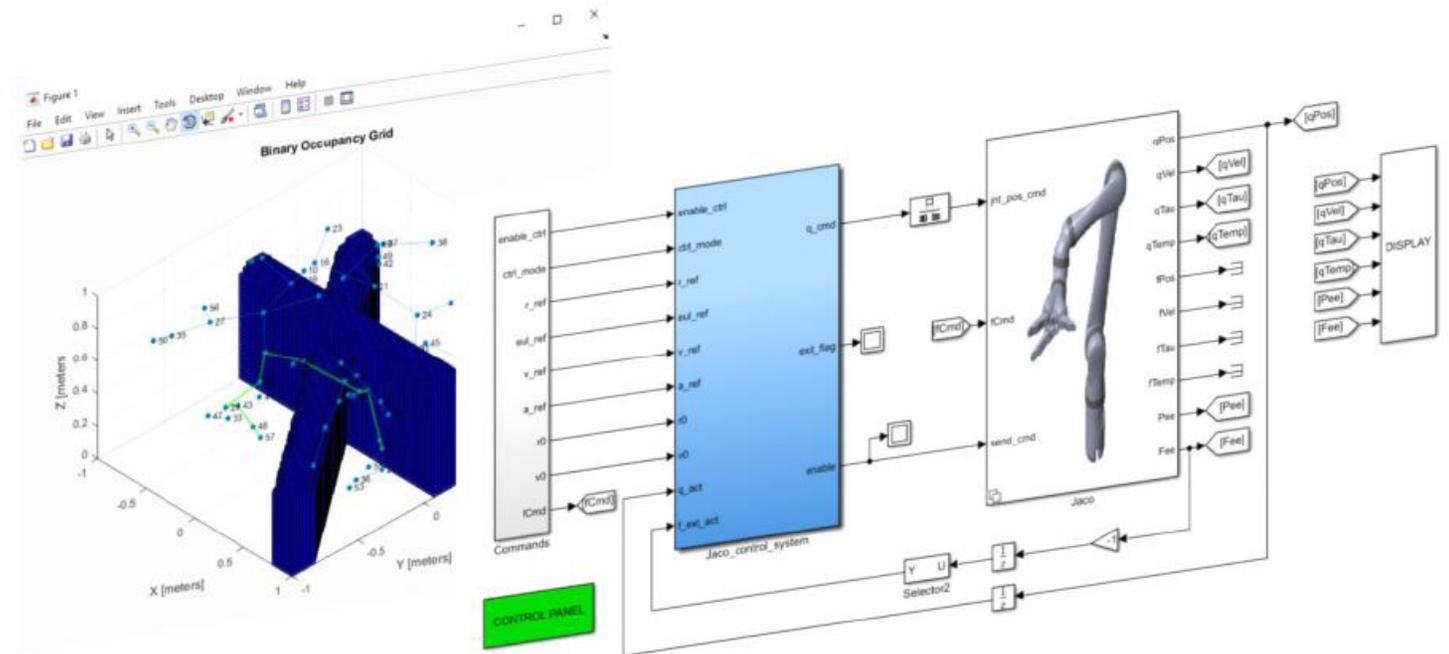
During the process of trying to decide which robotic arm would best suit their needs, one of **Mathworks'** engineers was initially put into contact with **Kinova**. Following numerous discussions between the two sides, **Kinova** emerged from **Mathworks'** initial shortlist as the best potential solution for two key reasons:

- 1.** Both sides had a willingness to have an open exchange of ideas that could improve our respective technologies;
- 2.** More importantly, **Mathworks** recognized the value of the network of partnerships in research fields that **Kinova** had already established to that point.

Once **Kinova's** partnership with **Mathworks** was officially struck, **Mathworks** became an Alpha user in **Kinova's** development, which officially implicated them in influencing our design to suit their needs. The reason we took this step is because **Mathworks'** tools are globally renowned and used around the world.



KEY OBJECTIVES

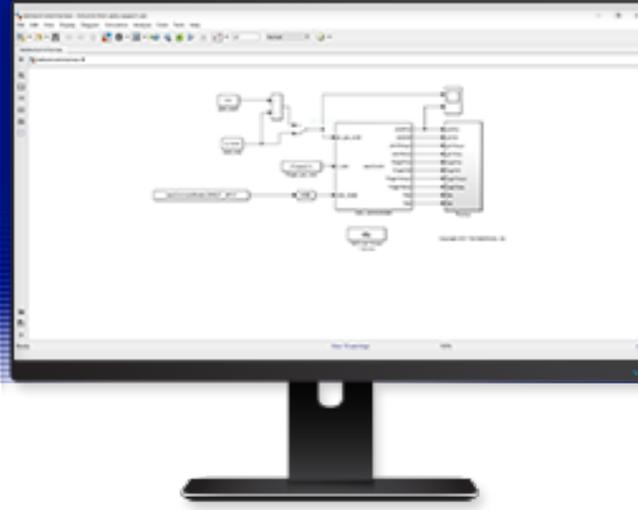


Custom develop the necessary platform that would give **Mathworks** the ability to demonstrate capabilities across their entire toolchain.





THE RESULTS



As a direct result of our continued partnership, both **Kinova** and **Mathworks** have been able to achieve success in three respects as a result of our partnership. First, **Kinova's** technology was able to complete a bridge to their tools, which meant our customers could now use **Mathworks'** various tools at a higher level to develop solutions. Our increased usage of their tools also allowed us to accelerate our own design process. And, finally, **Mathworks** became an active partner in our next-generation arm development, which contributed valuable real-time info and insight to us, and helped them figure out how they needed to adapt and improve to take advantage of that – a key to innovation that has allowed us both to benefit.

More specific to **Mathworks**, their involvement with **Kinova** allowed them opportunities to insert themselves into new conversations around technology in a meaningful way, beyond just talking in abstract terms. They've taken their demos to a number of conferences and trade shows over the years, and, each time, people take note of their software enabling our robot to perform very complex tasks. It has allowed them, ultimately, to showcase things they otherwise couldn't have without a professional piece of hardware that provides flexibility and openness.



I would recommend [Kinova] to people who want to adopt manipulation for their work, so folks who are doing a lot of research, not only in academia, but also in an industrial setting. I would also recommend it for teaching because I feel this is a very good teaching tool. It's very robust and it helps students to see professional equipment and work with it, to prepare for what they can expect to see in the industry.



- *Pulkit Kapur, senior industry manager of robotics and autonomous systems, Mathworks*

1. **KINOVA** page on the Mathworks' website:

https://www.mathworks.com/products/connections/product_detail/kinova-robotics.htm

2. **KINOVA-Mathworks** Github community platform for questions:

https://github.com/Kinovarobotics/matlab_Kinovaapi_wrapper

FOR MORE INFO:



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OR VISIT

[KINOVAROBOTICS.COM](https://www.kinovarobotics.com)

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