[1] L. Zhou, S. Bai, and M. R. Hansen, “Design optimization on the drive train of a light-weight robotic arm | Elsevier Enhanced Reader,” *Mechatronics*, vol. 21, no. 3, pp. 560–569, Apr. 2011.

This source will be useful for the hardware team designing the printer arm. The article explains the process of optimizing the drivetrain of joints in robotic arms. It gives step by step calculations and explanations of the process and provides numerous articles that could be extremely useful, especially the 12’th source cited. Following their described process will help us increase the efficiency and effectiveness of our robotic arm by decreasing the weight of the arm. This article focuses on five degrees of freedom in its example, but references higher degree of freedom sources and the process described will still be extremely valuable regardless.

[1]Thibaut Weise, Bastian Leibe, and Luc Van Gool, “Fast 3D Scanning with Automatic Motion Compensation,” 2007 IEEE Conference on Computer Vision and Pattern Recognition, Jul. 2007.

These researchers created a 3d-scanning system for dynamic systems with multiple objects. It can also detect color and texture. This could be useful for repairs on moving objects that only need minor repairs, but are still functional and operating. This would mean it would only be necessary to shut off the system when it is being repaired. Furthermore, since this system can identify multiple objects, it may also be useful for if there is a dynamic background that needs to be distinguished from foreground objects. There are also a lot of sources about other 3d scanning systems, dynamic mostly, but some static as well. This may be more tiered towards future research and out of the scope of the project depending on application.

[1]S. Kumar, B. L. Wardle, and M. F. Arif, “Strength and Performance Enhancement of Bonded Joints by Spatial Tailoring of Adhesive Compliance via 3D Printing,” ACS Appl. Mater. Interfaces, vol. 9, no. 1, pp. 884–891, Jan. 2017.

This article is about utilizing multimedia 3D printing in single lap joints to create a stronger and tougher adhesive bond between materials. The researchers tested different single lap joints using two different polymers in one adhesive, one for the majority of the adhesive, and the second for added stiffness. The second polymer was placed in a lattice structure inside the first main polymer during the 3D printing process simultaneously using a separate nozzle. This process showed a significant increase in both strength and toughness. This may be useful for us if we focus more on the repair aspect of the project, but if we focus on the arm, this will likely add too much complexity and be out of the scope of the project.