

During my time at Olympus, my main responsibility was managing, designing, building and assisting in programming a robotic palletising cell. This incorporated in depth Solidworks design, interacting with manufacturers and learning to use the Universal Robot Interfaces.

I was in charge of making sure the project reached completion from its conception to being fully functioning in a 3 month span.

This project included not just mechanical design, but electrical, programming a Pilz PLC and wiring electrical control boxes to interface between a Bosch Linear Slide and a UR10.

As well as developing technical competencies in developing electrical schematics, I also developed competencies in 3D printing, animation design and offline programming of robots using the Visual Components based software Octopuz.

Alongside this project, I was given several side projects including programming, researching and developing a modular gripper for a client to empty boxes of different chocolate bars and sort them ready for heat wrapping.

This then involved demonstrating the gripper to the client and programming in native java, for the robot to achieve maximum efficiency to meet the clients current throughflow of chocolate bars.

Another project I was given was designing bespoke grippers for a client who was using a Kuka KR16 to pick up and finish an assortment of brass parts with internal radius'. The complication to this project was that the client wished for one gripper to be used to pick up several different parts of varying threaded internal radius'.

I was instrumental in designing an automated camera panning rig for Olympus' custom promotional videos. This involved lots of work 3D printing and programming in C on Arduino and using Python on a Raspberry Pi.

Amongst my main responsibilities, was ensuring that our showroom was fully ready for our open day. This involved not just the palletising project, but several projects involving robotic welding systems on both Kuka Robots and UR10's.

During my palletising project, I managed myself and a small group of fellow employees in order to ensure that the palletiser was fully functional for our open day and the PPMA trade show.

This involved scheduling meetings, discussing and developing ideas and adapting the cell to encompass issues that occurred during the building process.

Personal Achievements

Amongst many things I achieved during my placement, my largest success was the Robotic Palletising system which was my main project. Not only was the project ready and functional in time for our open day, but during the design phase, I was able to make the whole cell modular and detachable to allow significantly easier transportation for when the system went to the PPMA trade show. I was praised for this design which improved both stability of the system, whilst minimising costs and time needed to fully assemble the system onsite.

I was also congratulated on the design of my modular gripper which revolutionised the custom grippers that Olympus normally developed, by allowing the gripper to be modified in both width and length to fit any box by utilizing SLS additive manufacturing to create Vacuum chambers which slot and lock together using a jig saw with grub screw mechanism.

Another achievement,, was the development of my technical skills on CAD software, I significantly improved my Solidworks Capabilities and learnt to use new software's like Polyscope and Octopuz.

Finally, at the end of my placement, I was given an appraisal as well as an salary bonus, as recognition of my hard work during my placement year and invited to return for further placements in the future.

Employer Comment

Sam has been a fully contributing member of our team from the 1st day of his placement. We knew each other from a couple of weeks' of work experience he undertook with us during his sixth form, and we knew him well enough to know

that the summer placement would be mutually beneficial. However, the level of quality independent work that Sam has achieved has amazed us, including our confidence in leaving him to lead negotiations with multiple suppliers required by him to deliver the projects he has been working on, above.

We fully understand that Sam will be looking for different placement experiences in later stages of his degree, but he knows he is welcome back at Olympus at any time.

A handwritten signature in blue ink, appearing to read 'Adam Swallow', with a long, sweeping horizontal stroke extending to the right.

Adam Swallow (Director)