

BMW GROUP + QUT
DESIGN ACADEMY



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JULY 2023

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NEWSLETTER



WELCOME



We are now officially in the second half of 2023, which is exciting! July has involved a lot of gearing up for the second semester WIL internships and capstone project preparations. We are always keen and excited about the next round of applicants.

A major event we worked towards this month was the QUT Open Day 2023. It was very exciting to be part of this event and showcase our amazing spaces and projects to the future generation of design professionals and their parents, friends and families. We did a lot to prepare the spaces including printing a range of new posters of our internship projects, research outcomes and real-world projects with BMW Group - you can see many of the posters in the photos of this newsletter. We also 3D-printed and displayed a variety of our work for BMW Group and IDEALworks over the years. They look amazing and we are incredibly happy with how well they turned out - thank you to Technical Associate Mike Lepre for assisting us with this. In all, the event was fantastic and we had so many people through the space and learn more about what we do as part of our unique collaboration with BMW Group.

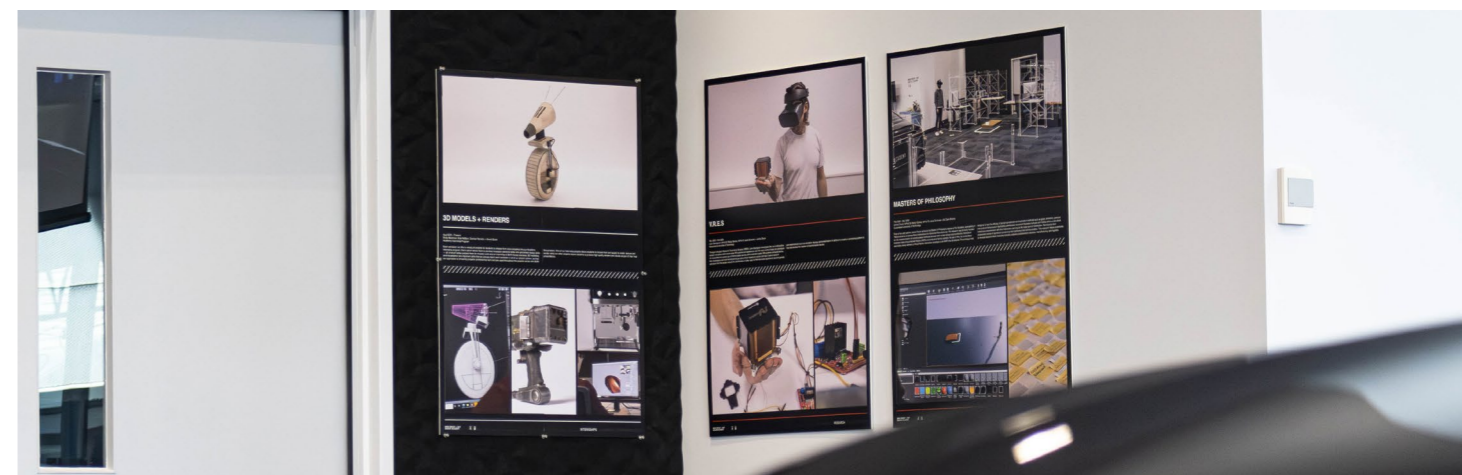
Finally, it's exciting to update everyone that I will be visiting Germany once again in September. I'm attending the Automotive UI (International ACM SIGCHI Conference on Automotive User Interfaces and Interactive Vehicular Applications) conference in Ingolstadt to present a research paper and will visit some colleagues at Technische Hochschule Ingolstadt (THI) as well as the CARISSMA Insitute (Center of Automotive Research on Integrated Safety Systems and Measurement Area). Of course, I will also visit our friends and colleagues at BMW Group and IDEALworks in Munich. Looking forward to updating you on this when I return!

We are looking forward to a busy August with the official start of the WIL interns and capstone projects.

Enjoy the read!

Dr Rafael Gomez
Founder + Academy Lead

PROGRAMS



INTERNSHIPS

The Internship program focuses on Fostering Design Excellence. It offers high-performing QUT design students an opportunity to advance their learning through real-world projects, and provides a pathway for paid internship placements at BMW Group in Munich, Germany.

Work Integrated Learning (WIL) Academy Internships

We are once again gearing up for another semester of Academy Internships. We have another BMW Group project on offer, where students will be working with BMW Group staff to develop a concept for 'An Interactive Digital Experience for STEM Education, for In-Vehicle Infotainment Systems'. We have also created some Academy projects that will allow students to work on refining their design skills, these being: 3D modelling and texturing, Wearable tech/smart materials for factory worker, idealworks iw.hub robot branding package, and Academy signage and graphics package. We are currently taking applications and will confirm the selected students early next month.

Capstone Unit Projects

Capstone units are back this semester for final year design students. We have a handful of projects on offer for Industrial and Interaction Design students to choose from. For Interaction Design these are: Exploring in-car projections for a BMW Group vehicle, Future Heads-Up Display design, and Augmented Reality headset design language. For Industrial Design students our projects are: BMW Factory worker wearable technology, Collaborative robotics design, and supercar interior exploration. We are looking forward to another semester of Capstone projects (this being the first semester with Interaction Design) can't wait to see the final results.

RESEARCH

The Research program centers on Exploring Knowledge Horizons. We have initiated a progressive research agenda for PhD and MPhil students to conduct world-class research through the Academy.

PhD Scholarships

We have some exciting announcements coming soon regarding newly initiated PhD projects on the “hidden knowledge of design thinking” and “future supercar automotive interiors”. We are also announcing two new awesome PhD topics including (1) materials for future electric vehicle interiors, as well as (2) revolutionary technologies for automotive interactions, that domestic and international students can apply for. More on this in the coming weeks so make sure you keep an eye out for this in our socials and upcoming newsletters.

SPECIAL PROJECTS

The Special Projects program pioneers world-first projects by Advancing Cutting-Edge Technologies. It is tailored for professional design graduates to work on advanced R+D projects for real-world applications. These projects are established by BMW Group in Munich and are supported by the Special Projects team at the academy.

Hams Hall Future Vision Project

This month has been a busy one for us, working on the Hams Hall Future Vision project as we get closer and closer to our September 1st deadline. We have finished off our work on the characters and uniforms, with the focus now on the movement of the people throughout the video. For this we used the Motion Capture system at QUT to record movements of factory workers and staff – specifically assembly line workers as they build drive units on a production line, in addition to generic walking, conversation and idle animations of people. We'd like to extend a huge thank you to QUT Animation lecturer Paul Van Opdenbosch, for giving us his time and expertise to assist on this project.

FEATURE



MOTION CAPTURE

Tim Lim
Academy Design Associate

In the world of 3D visualization, creating lifelike and fluid motion for humanoid characters has always been a time-consuming challenge. However, recent advancements in technology have opened up new opportunities to revolutionize the animation pipeline. Motion capture (Mocap) and virtual production (VP) have emerged as game-changing tools that can significantly speed up the process of creating fully animated characters for 3D visualizations. In this article, we will explore how our studio leveraged these cutting-edge techniques to streamline our workflow and achieve great results.

For industry professionals and newcomers alike, achieving believable motion for 3D humanoid characters has been a time-consuming task. However, virtual production and motion capture have become indispensable tools in our animation toolkit. Our recent experience at QUT's VP Mocap studio allowed us to explore the full potential of these technologies. During our studio session, we equipped one of our team members with a spandex suit adorned with infrared markers. The infrared cameras then mapped our movements onto a digital character, providing us with a quick and accurate representation of the character's motion. Within minutes, we were able to achieve semi-polished animations, a process that would have traditionally taken much longer.

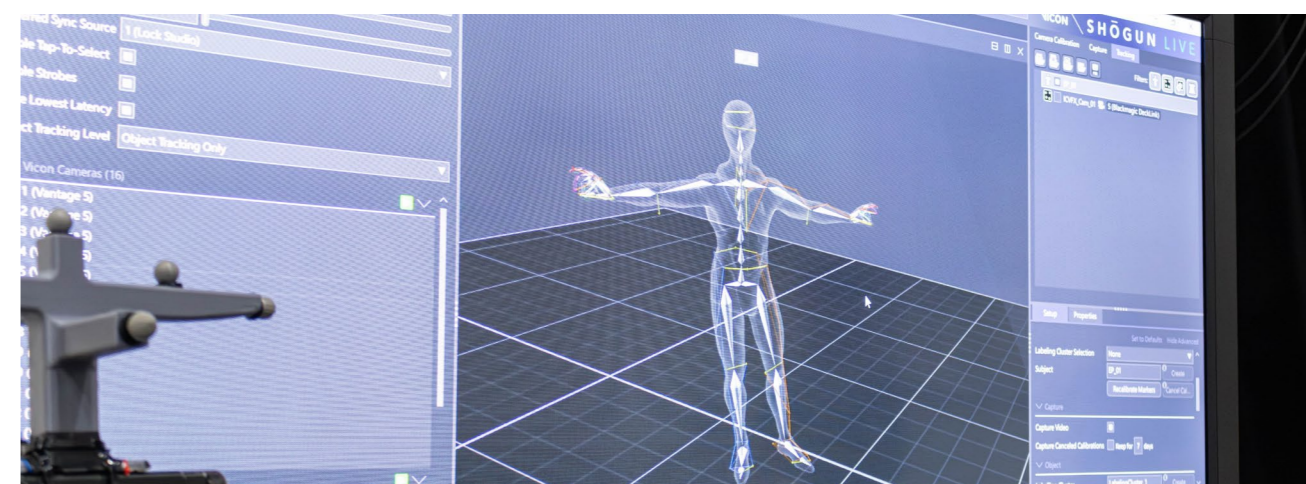
The true power of virtual production and motion capture lies in their ability to provide real-time visualization of our animations. By streaming live data directly into Unreal Engine, we could instantly see the output and make on-the-spot adjustments as needed. This immediate feedback loop allowed us to experiment with new ideas

and iterate rapidly, saving valuable time during the animation process.

For our team, motion capture proved to be a significant time saver. With limited prior experience in animating humanoid characters, this technology provided us with the necessary tools to elevate our work to a professional standard quickly. By eliminating the need for laborious manual animation, we could focus more on refining the creative aspects of our project.

The integration of motion capture and virtual production into our animation pipeline has proven to be a game-changer. By harnessing these cutting-edge tools, we were able to achieve lifelike and fluid motion for our 3D humanoid characters efficiently and effectively. The ability to visualize our work in real-time and rapidly iterate has undoubtedly accelerated our creative process and opened new doors for innovation in the world of 3D visualization. As technology continues to advance, we eagerly anticipate even more exciting opportunities to enhance our animations and bring our creative visions to life.

The successful implementation of the motion capture and virtual production system would not have been possible without the support of QUT and their skilled Virtual Production technician, Paul Van Opdenbosch. We extend our gratitude to QUT for granting us access to their state-of-the-art facilities, allowing us to tap into the potential of these groundbreaking technologies.



BRIEFINGS



ACHIEVEMENTS

- Applications open for Semester 2 Academy Internships
- Projects launched for Semester 2 Industrial and Interaction Design Capstone Units
- Academy part of 2023 QUT Open Day with

EXTERNAL COLLABORATIONS

Sunday 30th July was the 2023 QUT Open Day. We had an 'open house' type display in our Beta Lab, where a large turnout of prospective students to come in and chat to us about the Academy and hear what we do, the various student opportunities we provide, including access to the M8 Competition vehicle as a design and research tool. There was also the opportunity to browse the posters and 3D prints showing outputs from our 3x programs. It was great to see so many people interested in the Academy and speaking to them about student pathways.

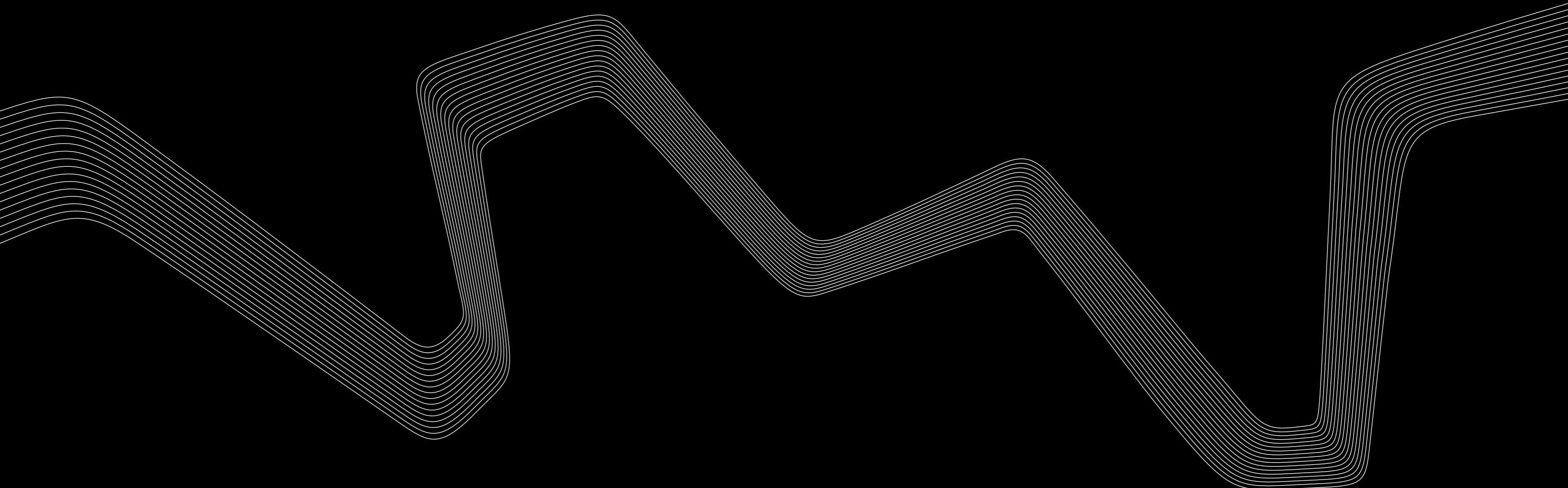


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