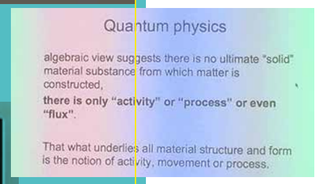
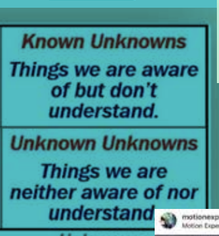
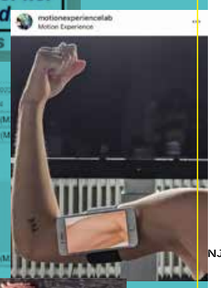






NEW EQUIPMENT
Students can work directly with and in virtual reality (with devices such as HTC Vive glasses including trackers, Oculus Quest headsets, an Optitrack MOCAP system including cameras, suits and marker sets) or extend virtual reality with the help of a Virtual Studio set up including a 3x2m LED wall, green screen, numerous video cameras, point cloud tracking cameras (AZURE Kinect), diverse AV equipment, DMX-controlled lights, a Lumidesk mixer, surround speakers, amplifiers, controllable Winches, moving heads, strobes, sensors and much more!

NJ ***How do you think the lab is doing now after 2 years of building it up? What is missing or difficult to establish?***

MB When it comes to the equipment that is interesting to be used in an environment as the MXLab there is almost no limit in what could be usable and the budget in this regard is often hard to match with what is needed. The MXLab's current equipment is a solid foundation allowing the students to experiment in a broad field of applications. From Virtual Reality to interactive installations to performance – there is a lot of hardware to serve all kind of needs. The MoCap System is industry standard and a great tool to transfer human and rigid body movement into (live-)data that can be used to drive all kind of audio-visual experience. We have a great amount of smaller equipment, some of which is a bit outdated but still serve its purpose quite well. Especially pc systems have a short lifespan (in terms of staying up to date) when it comes to 3d graphics. The 3 by 2 meter led-wall, we have in the lab completes the setup and allows us to even do first steps in the field of virtual production.

NJ ***Which projects / networked environments do you like to work on the most and why? Can you name your favourite projects that have been developed here?***

MB The process of connecting the infrastructure of the lab was one of my activities last semester and led already to significant improvements in the setup. Today the long waited and desired server (actually its a workstation which can also be used to do a lot of other tasks that distribute and host data) arrived and will boost our capabilities to exchange large datasets within the lab environment. This said, my opinion is that we now have a solid offer for our students when it comes to the infastructure in term of what they can do in the MXLab.
What we are still missing is recent hardware especially for video production/ live broadcasting (we are working with the first gen of HD video hardware and especially the fact that two key components of the system are limited to work in interlaced is a pain) and of course we need constantly pc workstations with the most recent graphics cards.

NJ ***The MXL concept provides for a wide range of networked areas in various audio-visual fields. From interactive media installations, surreal VR/MR productions within a theatrical context, to networked sensor environments dependent on performance to audio-visual live software experiments or virtual production: which of our fields of action do you find most intriguing?***

MB Personally, I was very interested in Virtual Production (VP) already before I came to work at KISD, so having a solid MoCap system and a led-wall in my »hands« got me excited and still is my favorite application of how to use the hardware. Actually almost all of the hardware available in the MXLab can and needs to be integrated to get a VP setup to work. So next to MoCap and led-wall the workstations and video-hardware is needed for a working setup, but further you can integrate even VR-headsets into the setup allowing to have a VR-scout to work on the virtual set and of course also DMX – you can integrate all of your DMX-lights and devices into the VP-setup, and Kinect and ... Concerning the spectrum of what can be done in the MXLab and its infrastructure, I think the mix is just what makes the lab stand out and shows that today everything is seamlessly connected somehow.

NJ ***When you started, I asked the question at the interview: Which research project would you like to work on? Or would you have liked to work on? What would you answer today? What would be relevant to develop in your opinion?***

MB Building our own metaverse! Yes, that sounds very ambitious anyhow also facebook started at a university as a small project and grew over the time to what it is right now. I believe its quite hard to break the dominance of American companies in the digital market anyway but my impression is that we are in a lot of cases just using American technologies instead of trying to be really innovative on our own. It seems we are often too scared to think big and come up with great ideas that contribute to shape the world of tomorrow. By the way, it's not so much about the metaverse itself but what comes with it. Looking at the gap of technical knowledge, available infrastructure and hardware we faced when the COVID pandemic forced almost our whole society into the digital era, everyone should understand that these technologies are crucial for a successful economy already. We should not underestimate the meaning of what the metaverse will become as an economical factor. Beside the importance not to neglect the economical meaning, I think it will be a lot of fun to work on this topic.
So, yes, of course we need money to realize such a research – beside the money, we would need to set up the infrastructure for such a project, I think we need to invest more money into wo-man power to be successful in such an undertaking!

NJ ***If you imagine a future, where should the journey go in the context of a (post)digital design world and / or (post)digitally oriented design study? What do we absolutely need in the future apart from capable employees?***

MB We need to stay up to date, so we need to have shorter intervals in which we update our hardware – this will be crucial to the success of the lab. Some systems are longer up to date or can be upgraded to be up to date again. Anyhow some technologies right now are limited to the current generation of hardware components and not updating them means we will not be able to stay up to date with what we teach.

NJ ***Speaking of employees: How would you advertise the job »Creative Technologist MXL«?***

MB When considering the question »how to describe the job outline«, I think first, it's not easy to find a single person to fit the needs of the MXLab – especially since a whole bunch of skillsets come into consideration. 2d & 3d graphics & 3d realtime graphic engines, 3d animation, audio & video, (live) broadcasting, lights and DMX, microcontroller and sensors and of course coding – we can find these combinations often in designstudios with highly specialized staff. The german term »Eierlegendewollmilchsau« would describe the ideal candidate, if you would look for a single person to fit the position. Beside the difficulty to find all of this knowledge and skill in one person, its essential for most creatives to have an exchange with other creatives in their work environment.

NJ ***What needs to be improved to make the job more attractive?***

MB I think it's often hard for state facilities to compete with private enterprises in terms of payment – so I think it would be wise to either look for a person with very high demand of security or for people just starting their professional career – I think for a young person just graduated this jobs pays well. On the other side an alternative approach could be to accept that professionals will not last long in the position, with the benefit that the employees come right from the industry and are used to the real worlds constraints.

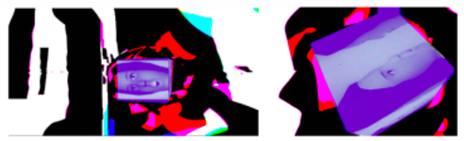
NJ ***Very good thoughts. If you ask me, I would see the need for two employees, aswell. One who is obtaining/maintaining/responsible for the infrastructure, so the lab can be utilized with an open lab character and the other would be involved in culture, research and development. Thank you very much Marko. All the best for your future and family. We will definitely miss you!***

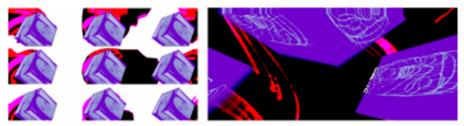
REFLECTIONS

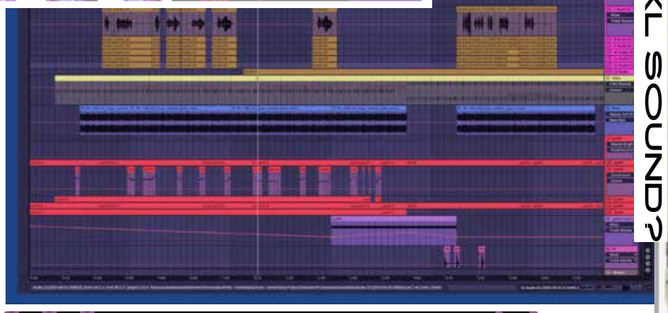
BY STEFANIE GRAWE

A multiangle perspective on the lab

As a designer and music producer MXL has had a big influence on my personal development. Both as a student, as a graduate and as a guest lecturer, I was able to help develop exciting projects at KISD. With the increasing interconnectedness of design, art and science and the transformation processes taking place faster than ever before, new questions arise to which MXL seeks answers. It's about the joy of creating and reinventing new emotional products, the combination of different fields, interfaces and interaction formats and, in general, about the design of the future. In this context, I mainly focus on interdisciplinary projects related to music. During my studies I attended projects like »The Hacking Orchestra« where we formed a band, explored and misused the audio-visual character of a thing, produced songs and presented them live on stage. In »Visual Music: Loops in Space« we created and performed our own live visuals; in a »States of Motion« seminar we built an installation based on different concepts and presented it at a self-organised exhibition. MXL and my mentor, Prof. Nina Juric, inspired me to delve further into this fields. So I decided to write my B.A. thesis about Artificial Intelligence as a creative partner in music production. As a guest lecturer I also had the opportunity to lead two projects and develop a music and sound package for the MXL with the students in the project »MXL #09: How does the MXL sound? - Producing an Audio Identity«.
All the projects have been very intensive and the learning on several levels very enriching. You start your research simultaneously on a theoretical and practical level, form a new language from it and develop, present and document a new product. It is precisely this holistic approach that is special and fun. I was able to gain new insights as well as a fundamental understanding of today's complexity and get a view of the big picture that helps me design new, more advanced projects. There is still a lot to explore and develop in the future and I am glad that the MXL exists for this purpose.







WITH WORKS BY
Alina Bertacca, Ananda Chiesa Fatahillah, Connor Biermann, David Delmay, Denise Martin, Elias Philips, Eradzh Yakubov, Hannah Flintrop, Inga Catherine Grönitz, Ionna Gkanidou, Jakob Troll, Joshua Probst, Karl Volker Gerhard Rogel, Katharina Lena Kirsch, Liv Jahns, Lukas Darius Loibl, Martha Johanna Elisabeth Herfort, Martina Morán González, Stella Fittje, Tim Klünker, Timm Sonnenschein, Valérie Arend

FACULTY
Stefanie Grawe
Inititated by Prof. Nina Juric

HOW DOES THE MXL SOUND?

Prodcuing an audio identity

W W W . X X X X X X X X X X . D E

LOFI-LOVE

visual music / music visuals

WITH WORKS BY
Alina Hildegard Oehler, Aysenur Acir, Balint Corvin Moritz Lanyi, Bea Sofie Timmermann, Evrim Oezgür Yilmaz, Jessica Martins Zisa, Klara Maria Tekath, Lena Heß, Lena Renz, Lili Charlotte Neuhauser, Malte Maximilian Kern, Max Brückner, Max Maria Scholpp, Phillip Schulz, Timm Sonnenschein, Valentin Natschke

FACULTY
Stefanie Grawe
Inititated by Prof. Nina Juric

ABOUT STEFANIE GRAWE

Stefanie Grawe is a Cologne based designer and electronic music producer under the name »GRAY« who works at the intersection of design, music and technology.
In her work »The Black Box Experiment« she dealt with the question of the extent to which artificial intelligence (AI) can be a creative partner in the musical creation process. She transformed an artificial neural network's system behavior to musical processes – with human beings turning into an artificial neural network themselves.
For this experiment she won the Lucky Strike Junior Designer Award 2019 and was also nominated for the German Design Award Newcomer 2021.
After completing her bachelor's degree in »Integrated Design« at KISD, she is currently doing her Master of Music at the Institute for Pop Music of Folkwang University of the Arts. In early 2022 she released her debut album »Dialogue Systems«. For her first single »Fractal«, a remix collaboration arose with the electronic music producer Jlin. She played at festivals like Timcheh Electronic Music Festival, c/o Pop festival, Cologne Music Week and Not Human Art Week and was also the opening act for the band Battles.
She also released her song »540°« (2020) on Kompakt Records label for the »Design Pentagon Group«-exhibition as a limited vinyl edition in cooperation with the Museum of Applied Arts (MAKK) and produced the remix »Light Is Winning« for Natalie TBA Beridze (2016) on Monika Enterprise. Stefanie is still active in the network »female:pressure«, for which she curated her own radio show and concert series in Cologne. In addition she is also part of the ambient collective »Sono Kollektiv«. She has been teaching music production as a guest lecturer in the MXL.

W W W . S T E F A N I E G R A W E . D E
W W W . G R A Y M U S I C . D E