



## „A unique chance“

**Interview with Irene Bruckmeier**, who took the 2<sup>nd</sup> place in Physics at the Jugend Forscht Regional Competition of Munich West on 3-4 March 2021 and the winner of the 'Robotics & AI' Internship – a special prize organized by Franka Emika, with the support of the MSRM TUM (current MIRMI TUM). Irene Bruckmeier (at the time 17 years old) won this first edition Internship by Franka Emika, as a special prize for her project in Robotics 'Control and stabilization of a two-wheeled LEGO robot with Simulink' (original title: Regelung und Stabilisierung eines zweirädrigen LEGO-Roboters mit Simulink). This one-week internship was covering everything on the spectrum of Robotics and, from actuators and sensors, robotics control, collaborative (lightweight) robotics, mobile robots, MedTech robotics, CAD prototype design, 3D printing, industrial robotics to diagnostics and testing.

In this short interview Irene is taking about her internship experience at Franka Emika.



FRANKA EMIKA

jugendforsch  
schüler experimentieren

MIRMI

TUM

„Franka Emika has a very intuitive technology“



**Which aspects of this Internship at MSRM-TUM and Franka Emika were most useful and valuable for you?**

Besides the new things I have learned, getting an insight into the research and work conducted in the MSRM-TUM and Franka Emika was particularly interesting. In the first place, both the academic and the industrial environments I've explored were very new to me. That's why I found the brief insights into all the areas that defined the internship program particularly valuable. It was great to talk to so many different people, learn about their different educational backgrounds and be truly inspired by them. I've met people who gave me the unique chance to dive in into the academic and industrial scene of Robotics and AI. After the product lifecycle management in Franka Emika, I got a clear vision of what steps are necessary to produce an industrial product that is valuable for the final buyer. Moreover, learning how to use CAD to design a robot arm from scratch was enlightening. Franka Emika has a very intuitive technology that I could have used before if I would know it. I also realized how difficult it is to design a product from start to finish, but I made it!



**Which was your favorite topic and why?  
What did you learn and how this particular day was important to shape your interests further.**

My favorite topic was mobile robots and autonomous vehicles. I must admit that the whole day was perfectly organized to enable my full participation. I found that the mixture of theory in the morning and the practice in the afternoon made these subjects much more accessible to me. I learned things and skills that I could quickly apply and I found it pretty awesome! I was also very interested in the drone simulations in the MSRM TUM and find out more about its control system. It was valuable as I had already dealt with control technology in my Jugend Forscht project and this experience allowed me to transfer my previous knowledge to UAVs. This is just an example of how everything I put into practice during the internship, matched with the research I've done. And being honest, my initial expectations about the content I learn were exceeded by the real 'in the field' experience.



**„I would recommend the internship to anyone interested in robotics“**

**Your project in robotics presented during the Jugend Forscht competition contained an advanced theoretical knowledge compared to the practical aspects that characterized it. Do you think this internship helped you to fill this gap, and if so, in which ways?**

The internship made me realize that it is important to use good hardware for a robot. Next time, I will not use a LEGO Mindstorms-robot for a project.

**We hope the Internship at MSRM-TUM and Franka Emika gave you relevant insights for your future educational path. Have you already decided what you want to do for your studies? What do you take with you, as a sort of „skills package“, from this learning experience?**

I moved to Berlin a few weeks ago and will start my Computer Science studies next week. The internship, and the opportunity to see the full product lifecycle management in Franka Emika, helped me gain fundamental insight into how the theory I will learn during my university degree can be applied and match with the product design done, considering market needs.

**Thinking back about this experience, would you recommend doing this internship as part of the Jugend Forscht competition? What are the elements that made it important and beneficial for young people who, like you, are passionate about robotics and invest their talents in relevant educational experiences?**

I would recommend the internship to anyone interested in robotics who wants to learn more about the topic in its diverse facets: from the software to the hardware, going through research, collaborative robots, industrial robotics and artificial intelligence.

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**We were pleased to host Irene Bruckmeier in Franka Emika office,** working hand in hand with the MSRM TUM, and doing our best to nurture the young talents of tomorrow in the field of robotics, as well as their personal and professional aspirations. We were happy to host Irene, with joy and dedication, what we love to do the most: robotics solutions that are accessible to – and usable by – everyone. This special prize offered within the Jugend Forscht Regional Competition of Munich West, now reaching its third edition, an important milestone: a step forward in terms of social engagement and responsibility to integrate robotics in the community.