

國立成功大學

高教深耕計畫出國報告書

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摘要

慕尼黑工業大學 (TUM) 是德國頂尖大學之一，以科學、工程和技术領域的卓越表現聞名。TUM 位於德國南部巴伐利亞州的首府慕尼黑，是歐洲領先的研究機構之一。該校成立於 1868 年，以創新、尖端研究以及與產業領導者的緊密合作享有盛譽。

我在 TUM 就讀於資訊系 (Informatics)，這為我提供了一個全面且充滿活力的學習體驗。我們系開設了多元化的課程，涵蓋人工智慧、機器學習、電腦視覺及軟體工程等領域。TUM 擁有各個領域的傑出教授，並為學生提供豐富的學術資源，包括最先進的實驗室、研究中心，以及與業界的合作專案。

我認為最寶貴的一點是 TUM 提供給我互動且以研究為導向的學習環境。教授和助教不僅學識淵博，還十分熱心，時刻鼓勵學生探索複雜問題並培養批判性思維。此外，TUM 擁有高度國際化的學習環境，吸引來自世界各地的學生，讓我有機會與不同文化背景的同學交流，拓展了我的國際視野。

除了學術方面，慕尼黑的學生生活也非常豐富多彩，擁有許多文化與休閒活動。這座城市擁有壯麗的建築、歷史遺跡，以及世界知名的慕尼黑啤酒節 (Oktoberfest)。在 TUM 學習的經歷無論在學術還是個人成長方面都讓我獲益良多。我誠心推薦 TUM 給任何希望來德國交換的學生們，一定會有意想不到的收穫！

Abstract

The Technical University of Munich (TUM) is one of the top universities in Germany, renowned for its excellence in science, engineering, and technology. Located in Munich, the capital of Bavaria in southern Germany, TUM is recognized as one of the leading research institutions in Europe. Established in 1868, it has a strong reputation for innovation, cutting-edge research, and close collaborations with industry leaders.

I had the opportunity to study at TUM in the field of Informatics, which provided me with a comprehensive and dynamic learning experience. The university offers a diverse range of courses, covering areas such as artificial intelligence, machine learning, computer vision, and software engineering. With highly distinguished professors specializing in various domains, TUM provides students with abundant resources, including state-of-the-art laboratories, research centers, and collaborative projects with industry partners.

One of the aspects I found most valuable was the interactive and research-oriented environment. Professors and teaching assistants were not only knowledgeable but also highly supportive, always encouraging students to explore complex problems and think critically. Moreover, the university fosters an international atmosphere, attracting students from all over the world, which allowed me to engage in cross-cultural exchanges and broaden my global perspective.

Beyond academics, Munich offers a vibrant student life, with numerous cultural and recreational activities. The city is home to stunning architecture, historical sites, and the famous Oktoberfest. Studying at TUM was truly an enriching experience, both academically and personally, and I highly recommend it to anyone looking for world-class education in technology and innovation.

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Content

1. Motivation

I am thrilled about the opportunity to apply for an exchange program in Informatics at the Technical University of Munich. My consistent goal has been to enhance my skills in AI-related fields, and this exchange offers the ideal platform to further refine my expertise. I am eager to engage in knowledge sharing with professors and fellow students, anticipating significant personal and academic growth from this experience.

Furthermore, I am confident that my analytical and problem-solving abilities will be valuable contributions to the exchange program. I believe that the exposure and experiences I will gain during this exchange will be invaluable in my journey toward excellence in the field of AI.

2. Process

- **Visa Application:** You must make an appointment at least two months before departure, as the German visa processing time is usually long—around a month or more. Appointments are also highly competitive, so it is recommended to check online for available slots in advance and book early. Group appointments for students from the same university are easier to secure.
- **Flight Tickets:** Emirates offers many student discounts despite requiring a layover. Additionally, the baggage allowance is 40 kg, which is beneficial for students.
- **Bank Account:** I chose the online bank N26, which is convenient as it can be linked to Apple Pay. However, the student plan does not include a physical card. Nevertheless, cash deposits and withdrawals can still be made via the app at certain pharmacies and supermarkets.
- **Health Insurance:** When applying for a blocked account through Expatrio, I also applied for TK health insurance. Before returning to Taiwan, remember to contact them in advance to cancel the contract.
- **Mobile Service:** I used Fraenk for my mobile plan. It is an affordable and convenient option in Germany, offering a monthly subscription with no long-term contract. The plan includes a fixed amount of data, unlimited calls, and texts within Germany. Everything is managed through the Fraenk app.

3. During the study period

- **Lectures:**

【Introduction to Deep Learning】

We have lectures and homework every week. The teaching assistants are very nice and patient—we can ask them questions every day. One time, I encountered a bug in my homework, so I woke up early to ask for help. The teaching assistant was very kind and explained everything in detail. If they cannot solve a question within office hours, they will continue working on it until you no longer have any doubts. As for the exam, I found it to be the most difficult one for me. You must prepare and review well in advance.

【Computer Vision III: Object Detection, Tracking, and Semantic Segmentation】

We have lectures every week and exercise sessions twice a week. This course is much harder than Introduction to Deep Learning, but you can also ask the teaching assistants for help. For the exam, you need to study in depth and fully understand every concept to perform well.

- **Practical courses:**

- 【Artificial Intelligence in Medicine】**

Our project focuses on image translation using segmentation-guided diffusion. In my group, we have a weekly meeting with our advisors and another meeting with our teammates to update our progress and discuss the next steps. We give three presentations in class and a final public poster presentation, where we introduce our project and answer questions.

From my perspective, working in a team is a great opportunity to exchange ideas with other students. I have learned a lot from my teammates, especially one from Germany, who has been the best teammate I have ever worked with.

- **Daily life at TUM:**

During my exchange at TUM, I maintained a study hard, play hard mindset. Fortunately, I learned a lot from my advisors and classmates, passed all my exams, and made many friends from different countries, including Romania, Turkey, Germany, Italy, and more.

After class, we often formed a big circle to chat while waiting for each other before heading to the next class or taking the U6 subway. One thing that really impressed me was their habit of greeting and saying goodbye with a handshake. During my time there, I probably shook more hands than ever before in my life!

Additionally, when students finish a class or presentation, they knock on the tables as a way of clapping—just like how we applaud in my home country.

- **Dormitory life:**

My roommates are so nice. They came from Tunisia, Colombia, Italy, India, and Germany. We often shared food from our home countries and talked about our university experiences. Before I left Germany, my Italian roommate made a homemade pizza—it was the best and most tasty pizza I have ever had!

4. Reflections and Recommendations

Being an exchange student was truly the best time of my life. I traveled to many countries, including Austria, Switzerland, the Czech Republic, Italy, France, Hungary, Spain, the Netherlands, and the UK, experiencing a variety of local cultures.

I encourage everyone to make friends from different countries. Their thoughts and perspectives are different from ours, and you may receive unexpected and insightful responses from them. Don't be afraid to reach out—they are all friendly and willing to help. For example, one of my Italian-German friends, whom I initially met through another friend, offered to help me move my luggage before I left Germany, even though we weren't very familiar with each other at first. Within just two days, we became good friends.

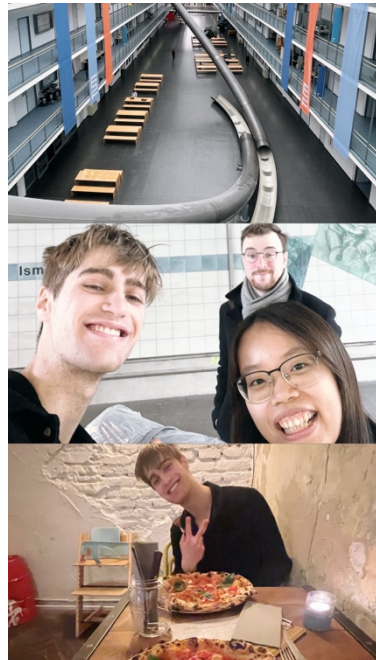
By the way, before leaving, I probably hugged more people than ever before in my life!

Appendix

1. My nice roommates



2. Daily life at TUM and my friends





3. Traveling in Germany

