

## GRANTEE EXPERIENCE REPORT

Indo-German Centre for Sustainability (IGCS)

IGCS Research Exchange, Grant Period 2023

# experience report

Nandhini Duraimurugan



### Experience Report on IGCS Research Exchange, Grant Period 2023

#### **IGCS Grantee**

Nandhini Duraimurugan

#### **Home Institute | Home Supervisor**

Indian Institute of Technology Madras, Chennai, India | Prof. K. Murali

#### **Host Institute | Host Supervisor**

Institute of Textile Technology,  
RWTH Aachen University

Supervised by: Prof. Dr.-Ing. Dipl.-Wirt. Ing. Thomas Gries

#### **Research Topic**

Sustainable Urban Development Microgrid Control using Deep Reinforcement Learning

#### **Starting/End date of the student exchange period**

01.01.2023 – 30.06.2023

A promotional poster for IGCS grants. It features a smiling woman with long brown hair wearing a yellow shirt and a backpack, set against a dark red background with a white mandala pattern behind her. The text on the poster reads: 'IGCS INDU-GERMAN Centre for SUSTAINABILITY', 'Grants For Students and Researchers', 'Conduct Research on sustainability topics in India or Germany', 'APPLICATION OPEN', 'Floating deadline for the year 2024', and 'For more information: https://www.igcs-chennai.org/grants/'. At the bottom, there are logos for funding partners: DAAD, German Ministry of Education and Research, Federal Ministry of Education and Research, RWTH Aachen University, C I A U, and TU9.

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Funded by: DAAD, German Ministry of Education and Research, Federal Ministry of Education and Research

In association with: RWTH AACHEN UNIVERSITY, C I A U, TU9

#### **About the IGCS Grants**

IGCS awards scholarships to students and researchers from India and Germany with excellent academic records, very good English, and intercultural communication skills. The scholarship consists of a mobility grant and an accommodation grant according to DAAD funding rates, as a rule. Learn more about the funding opportunities at IGCS [here](#).

## Experience Report on IGCS Research Exchange, Funding Period 2023

*As a beneficiary of the IGCS scholarship, the participant has committed to sharing their valuable experience. This report is designed to encompass two distinct parts:*

### **Part I: Written Testimonial**

I am Nandhini Duraimurugan, Ph.D. research scholar in the Department of Ocean Engineering, Indian Institute of Technology Madras. In this report, I share my personal and living experiences during my research stay at Aachen. I provided answers to several important queries in this report that can be useful to others who are organizing research voyages to Aachen. Only I am responsible for the content of the experience report.

### **Planning, Organization and Application Process**

Email correspondence with the host professor in your area of interest should be the first step in the preparation process. I have found that the academics at RWTH Aachen are quite receptive to working together on research projects. The next stage is to apply for IGCS financing if the host professor has given a good response. IGCS requirements (1) Curriculum Vitae (2) A cover letter outlining the study concept and the requirement for an IGCS fellowship 3) A letter of recommendation from your own/home university's research guide 4) A letter of invitation from the visiting university professor. 5) My home university's grade sheet for the courses I took. My experience is that IGCS responds to your application in the shortest possible time. To provide time for applying for a visa and finding housing in Aachen, I suggest beginning this process at least three to four months in advance.

### **Travel preparation and essentials**

Once you get selected for the IGCS scholarship, you can prepare for your visa and travel. If you stay in Germany for a short time, there will be no problem. Especially for Indian students going abroad for the first time, I keep a quick list of recommendations for travel and stay preparations:

**Visa:** Getting visa appointments usually takes time. So, kindly start the process a bit earlier. For the visa make sure to have all necessary documents along with the funding proof and temporary/short accommodation proofs.

**University enrolment:** The university enrolment process can be initiated via online with the support of the RWTH International office. The enrolment deadlines vary between August 1 to December 31 for the winter semester and February 1 to June 30 for the summer semester. This enrolment will be helpful to access course materials, high-performance computers at RWTH Aachen for doing simulations, public transport, Mensa (student canteen) libraries, study halls, etc., I would advise enrolling at the university while you are visiting Aachen. After enrolling here, the institution will issue you a student travel card. You are able to make cost-free travel all around NRW using that student travel card.

**Health insurance:** Health insurance is very important before your travel to Germany. It is always better to take German public as well as private insurance before your arrival. The following are some private health insurance companies: Allianz, Mawista, AXA, Barmenia and HanseMerkur. I am personally satisfied with using MAWISTA health insurance.

**Accommodation:** In order to find suitable housing for your stay in Aachen, please have a thorough look at the RWTH housing website. This website provides general information about the housing situation in Aachen and provides tips on how to best find short-term or long-term accommodation. There are a few companies offering furnished flats for short term rent. Most of them have contact/request forms on their websites: Enclosed you will find a few contacts from private landlords.

- [www.meinestadt.de/aachen/immobilien](http://www.meinestadt.de/aachen/immobilien)
- [www.wg-liste.de](http://www.wg-liste.de)
- [www.wohnpool.de/mieten/wg/aachen](http://www.wohnpool.de/mieten/wg/aachen)
- [www.zwischenmiete.de](http://www.zwischenmiete.de)
- [www.hc24.de](http://www.hc24.de)
- [www.wunderflats.com](http://www.wunderflats.com)
- [www.immobilienscout24.de](http://www.immobilienscout24.de)
- [www.extraraum-aachen.de](http://www.extraraum-aachen.de)
- [www.aachen.studenten-wohnung.de](http://www.aachen.studenten-wohnung.de)
- [www.immonet.de](http://www.immonet.de)
- [www.immowelt.de](http://www.immowelt.de)
- [www.studenten-wg.de](http://www.studenten-wg.de)
- [www.wg-gesucht.de](http://www.wg-gesucht.de)

Further, it would be nice to book some Airbnb and booking.com rooms for the initial 2-3 weeks. This will also be helpful for the visa process. If you want to change/cancel also you can do it easily. It is just not possible to rent an apartment from the landlord for a brief visit to Aachen, say three months. I would suggest pursuing a sublet (Untermietvertrag in German), which is a quite straightforward and quick method of obtaining an apartment for a period of time. Additionally, watch out for fraudulent posts on some ad websites. Prior to signing the room contract, do not transfer any advance rent. Take your time going over the contract. I have firsthand experience with the issue of fraudulent posts.

**Flight travel and luggage:** While booking flights from your home country to Germany you can choose Düsseldorf or Frankfurt as the destination airports. Düsseldorf is very close to Aachen. Then from the airport, you can take regional trains to Aachen directly. 49-euro tickets are also available now from 2023, one can use it to travel the entire Germany with this ticket through regional trains. To track the correct train or bus routes one can use the “Deutsche Bahn (DB)” mobile app.

*Important note:* Avoid packing any liquids/medicines/food or masala items in your hand baggage. You will be required to discard it at the airport check-in desk, regardless of its cost.

**Bank account and sim card:** I would recommend getting a new bank account and sim card after reaching Germany. If needed for the initial few days please get some liquid cash in your hand from your home country banks. There are some German banks offering internet/online banking via mobile apps. But I never experienced this. The international credit cards or travel cards are also the best alternatives for short stays.

**Shopping:** Proper waterproof shoes, hand gloves, umbrella and weather jackets are important especially when you are traveling during the winter season. It is generally advisable to include basic utensils such as a spoon, plate, and cup. Furthermore, essential medicines are recommended to carry because scheduling appointments with doctors is tough here, even with your insurance. Unless it's a true emergency.

### ***Studies at RWTH Aachen***

I intend to use the special resources and facilities of RWTH Aachen University to carry out the experiments for my doctorate. My supervisors and fellow workers provided me with excellent assistance. I was offered a workplace and HPC cluster facilities to perform the numerical simulations. Because of the work culture in Aachen, my research development has been fantastic throughout my stay. In addition, I was able to greatly broaden my research relationships.

I was allowed to begin with the university's language courses in addition to my research. Over time, I enrolled in a beginner's level German course and strengthened my foundational proficiency. Additionally, registration at the university grants access to the library, study areas, gym, RWTH seminars and lectures, and other amenities. For any assistance during your stay, please contact the international office.

### ***Free time in Aachen***

Aachen is a compact and diverse student city with a lot of internationals. This is a new and interesting experience in terms of life as well as career. In Aachen, a renowned chocolate plant is known as the "Lindt factory." If my memory serves me well, they offer students 10% off every Tuesday; thus, schedule your visit to the factory for that day. However, if you find something at a steep discount, check the expiration date carefully. I really enjoy the days in Aachen.

There are many nice places to visit during the weekends and holidays including Maastricht, Monschau and Drielandenpunt (three country point). In addition, visitors to Germany in March and April shouldn't miss the cherry blossoms, particularly in Bonn where a well-known boulevard is dedicated to the sight. One of the closest cities to Aachen is Cologne, which is also one of the largest and most diverse places to visit. The third-tallest church and tallest cathedral in the world is the renowned Cologne Cathedral. Additionally, one might attempt affordable student travel companies like pm2am, Uniflucht, and studifahrten to tour the other neighbouring European nations.

### ***Working and living with local students and researchers***

I found pleasure in the productive conversations that transpired inside our research team. I have fair access to resources to do my study. The valuable contributions made by my colleagues were important in expediting the project's conclusion. In addition, I had an opportunity to visit the laboratories and seminars happening in the institute to get some broader ideas on the variety of research topics.

### ***Conclusion***

Altogether my stay at RWTH Aachen widened my view to a whole new universe. With the help of my research group, I was able to do the assigned duties most of the time. I produced two research publications and one conference during this time that are crucial to the completion of my Ph.D. I am grateful to IGCS for granting me the financial means to prolong my stay at RWTH Aachen. Finally, the RWTH Aachen academics are, in my opinion, the friendliest when it comes to international research cooperation. As a result, I heartily advise any prospective foreign student to utilize this platform in preparation for their time at RWTH Aachen. I would like to work as closely as I can with IGS in the future.

I plan to stay there and conduct some more collaborative research.

## Part II: Digital Media

Grantees are invited to share their experiences in digital media, encompassing photographs, illustrations, or graphics within the context of the IGCS scholarship.

