

Internship Report

Student Researcher at GeoSocial AI at IT:U

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Organization: Interdisciplinary Transformation University (IT:U), Linz

Internship Duration: 1st August 2025 - 19th December 2025

Submission Date: 24/02/2026

Declaration

"I hereby declare that this internship report is my original work and has not been submitted elsewhere for any other academic credit."

AI (Google Gemini) was only used for translation and better wording.

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Internship Scope

I did my internship from 1st August 2025 to 19th December 2025 for 12 hours per week at the Interdisciplinary Transformation University (IT:U) in Linz. The IT:U Linz is a new public technical university specializing in interdisciplinary research and project-based learning in digital transformation.

I served as a Student Researcher in the GeoSocial AI research group, led by Prof. Dr. Bernd Resch. My role was designed to bridge the gap between theoretical geoinformatics and practical, data-driven solutions for societal issues.

Project

A central component of my internship was the involvement in the Climate Agents project. Climate Agents is a Citizen Science project initiated by the Federal Ministry for Women, Science and Research (BMFWF) and implemented in cooperation with the OeAD. The project actively involves students, teachers and citizens in climate research and empowers them to become “Citizen Scientists.”

Using a co-creation approach, participants collaborate with researchers to investigate local impacts of climate change. A strong focus of the project lies in geoinformatics and spatial analysis: students collect, analyse, and visualize geographically referenced data to better understand climate-related patterns and trends in their own communities. They work with digital mapping tools, GIS applications, AI-supported data analysis, and spatial datasets to explore environmental changes.

A central outcome of the project is the creation of interactive “StoryMaps,” where students combine maps, spatial data, narratives, and multimedia elements to communicate their findings. This approach strengthens spatial thinking, data literacy, and science communication skills, while also deepening understanding of scientific workflows and geoinformation technologies.

Duties & Activities

I was responsible for a diverse range of tasks that supported the Climate Agents project. My daily and weekly activities included:

- **Research & Literature:** I conducted extensive background research and reviewed academic papers to summarize existing theories and identify gaps in current climate-related literature.
- **Data Management:** My core technical duties involved the collection of data through surveys and interviews, integrating these findings using GIS tools. I was

responsible for organizing these datasets, maintaining databases, and transcribing essential field notes.

- Analysis & Visualization: On a weekly basis, I applied statistical tools and qualitative methods to analyse the collected data. A significant portion of my time was dedicated to the preparation of visual materials and presentations for conferences and lectures to communicate project results effectively.
- Project Coordination: Beyond technical analysis, I assisted in managing project schedules and contributed to the administrative quality of the research by proofreading and formatting scientific documents. I also played an active role in the preparation and implementation of workshops designed to translate research findings into actionable insights.

Tasks & Methodology

The methodological approach during my internship at IT:U followed a continuous research cycle, integrating academic theory with practical geospatial applications. My work for the Climate Agents project began with a review of existing literature, where I analysed academic papers and books to summarize key findings and identify theoretical gaps regarding digital transformation and climate resilience. This foundational research served as the basis for informed data collection and project development.

In the data acquisition stage, I employed a multi-method approach that combined social and spatial data. This involved conducting surveys and interviews, while simultaneously utilizing GIS tools to ensure all collected information was geographically referenced. To maintain the integrity of this data, I was responsible for the systematic organization of files, the transcription of qualitative notes, and the ongoing maintenance of project databases.

The analytical process relied on a combination of statistical tools and qualitative methods to interpret the datasets. I applied these tools to identify patterns within the GeoSocial AI framework, ensuring that the results could be translated into actionable insights. A significant part of my methodology also included the synthesis of these results into formal reports and the preparation of visual materials for conferences and lectures. Finally, I assisted in the proofreading and formatting of scientific documents and contributed to the practical implementation of workshops.

Individual Contributions & Tools

I used a range of digital tools to support data collection, analysis, and communication. These include GIS software such as ArcGIS Pro, ArcGIS Online, Survey123, ArcGIS Dashboards, and ArcGIS StoryMaps for spatial data management, visualization, and

interactive presentation. In addition, statistical tools such as R and Python are used for data processing, analysis, and modelling.

The results of the project consist of designed maps, summarized analytical reports, and short papers prepared for publication. Furthermore, presentation materials are developed for lectures and public dissemination, ensuring that findings are communicated clearly and effectively to both academic and non-academic audiences.

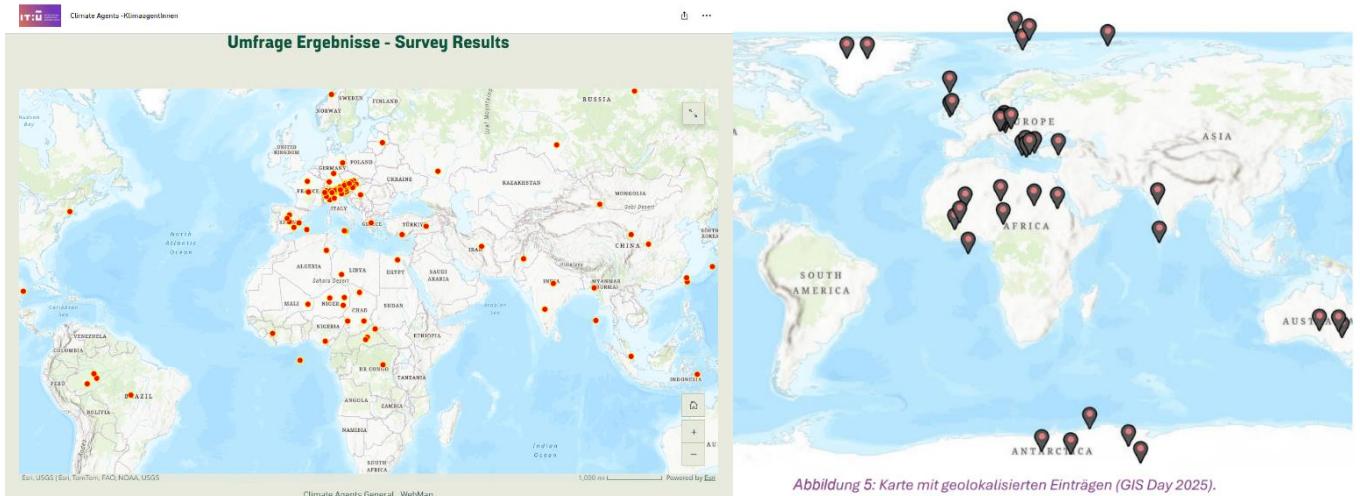


Figure 1: Examples of maps designed by me

Learning Objectives

My motivation for this internship was to bridge the gap between theoretical geoinformatics and its practical application in solving complex societal challenges. I specifically aimed to enhance my skills in the computational analysis of social and geographical data within an interdisciplinary environment. Working on the Climate Agents project allowed me to meet these. Furthermore, I successfully gained deep insights into the professional process of scientific research and the preparation of academic publications.

Through the work with GIS tools and statistical analysis, I significantly deepened my proficiency in handling spatial data. I learned how to systematically organize large databases and transcribe complex qualitative notes into structured formats for research. Beyond these technical competencies, I developed essential soft skills, particularly in project management and communication. Assisting in the organization and conducting of workshops and preparing visual materials for conferences improved my ability to communicate complex scientific data to diverse audiences.

This internship served as a direct extension of my studies in the MSc Applied Geoinformatics program. I could apply the GIS theory and spatial statistics directly to research tasks and I was able to apply and extend the spatial modelling and data

analysis techniques learned in my courses. This experience has been very good for my professional and personal growth. The exposure to a professional research environment at IT:U provided me with the necessary expertise to apply innovative geoinformatics tools to real-world problems effectively.

Self-Evaluation and reflection

Reflecting on the experience, the greatest strength of this internship was the high level of interdisciplinary collaboration. Being involved in the entire research lifecycle, from literature review to the implementation of workshops, provided a holistic understanding of academic work. The internship allowed me for significant professional growth in an innovative, interdisciplinary environment.

While the complexity of managing many diverse datasets for the Climate Agents project was challenging, it ultimately strengthened my problem-solving abilities. I highly recommend this internship to future students who are interested in the intersection of social science and geoinformatics, as the IT:U offers a unique, project-based learning environment that is ideal for professional development.

Recommendations to future interns

Working at the intersection of social science and geoinformatics presented unique challenges, particularly regarding the integration of heterogeneous datasets for the Climate Agents project. Combining qualitative interview data with spatial data required the development of structured workflows and precise database maintenance to ensure data consistency throughout the entire analysis period. Another hurdle was interdisciplinary communication, as complex concepts from AI and geoinformatics had to be processed and visualized for workshops and presentations. Through active participation in project scheduling, these tasks were efficiently integrated into the weekly work routine.

The most significant lesson learned from these challenges was the importance of meticulous data management and the value of interdisciplinary expertise. I realized that addressing societal challenges through data-driven approaches requires not only technical proficiency in GIS and statistical tools but also the ability to combine findings across different academic domains. This experience has solidified my professional goal to professionally apply innovative tools from AI and geoinformatics to solve real-world problems.

References

Link to Storymap: [Climate Agents Storymap](#)

Link to e-portfolio: [E-Portfolio Marlene Jungreithmayr](#)