

Marshall Plan Scholarship: Field Report

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I am a second-year graduate student working on my Master of Science degree in Geography and Environmental Studies at the University of New Mexico in Albuquerque, New Mexico, USA. In late 2017, I was awarded the Marshall Plan Scholarship to study GIScience at the Carinthia University of Applied Science (CUAS) in Villach, Austria, over the summer of 2018. Under the guidance of Dr. Gernot Paulus at CUAS I studied the application of aerial imagery acquired by unmanned aerial systems (UAS) to model flood inundation of riparian land and adjacent infrastructure. One of the many challenges to completing this modeling procedure is the availability of adequate datasets pertaining to surficial features below a vegetative canopy. Typically, LiDAR data is used to address this requirement, but in terms of acquisition cost and computational requirements this can be prohibitive to practitioners.

Dr. Paulus and the team in the Geoinformation and Environment department at CUAS had previously collected and processed a robust high-spatial-resolution dataset of a kilometer-long stretch of the Drau River near Obergottesfeld, Austria, just northwest of Villach. The Upper Drau Valley is a part of the EU LIFE Programme, and its history of extensive management for infrastructure and agriculture make it a broadly-applicable study area. By studying at CUAS I was granted the valuable opportunity to access these datasets and perform relevant research. Another important dataset for the error approximation and validation is a LiDAR dataset published by KAGIS, a free repository of geospatial information maintained by the Austrian state of Carinthia. By manipulating these two datasets I was able to develop a workflow and complete a research report that I am submitting for publication in an international journal with Dr. Paulus and my supervisor at UNM.

Beyond the availability of these datasets, Dr. Paulus's guidance was helpful, insightful, and entertaining. We met formally every few weeks but were in rather close contact on campus on a semi-regular basis. Furthermore, I was assigned a desk and computer in an open-format geospatial laboratory with a handful of other graduate students in the Geoinformation and Environment department, and we frequently collaborated and brainstormed techniques to address novel problems. As international students, we all had a similar foundation in the principles of geography and GIScience but brought unique contextual insight to ensure a rich and enlightening co-learning experience.

Further strengthening this multinational learning opportunity, a series of colloquia from our peers and faculty introduced me to a world of problems and solutions. The university also funded my

registration at the GI-Forum annual conference in Salzburg where I was able to network with scholars and practitioners, some of whom have generously remained in contact with me in the months following my return home to the US.

Villach is a beautiful small city nestled in the Eastern Alps with a rich history and plenty of outdoor activities. I rented a bicycle from the university for a refundable deposit and rode it daily either to the historic city center or one of the three picturesque lakes for a swim. A local bus departs from the main bus station downtown to Dobratsch Nature Park where you can wander for a full day, and the karst aquifer in the region is host to numerous hot springs and caves along an ancient Roman trail. I strongly recommend that future Marshall Plan Scholarship recipients take full advantage of their time in such a special part of the world.