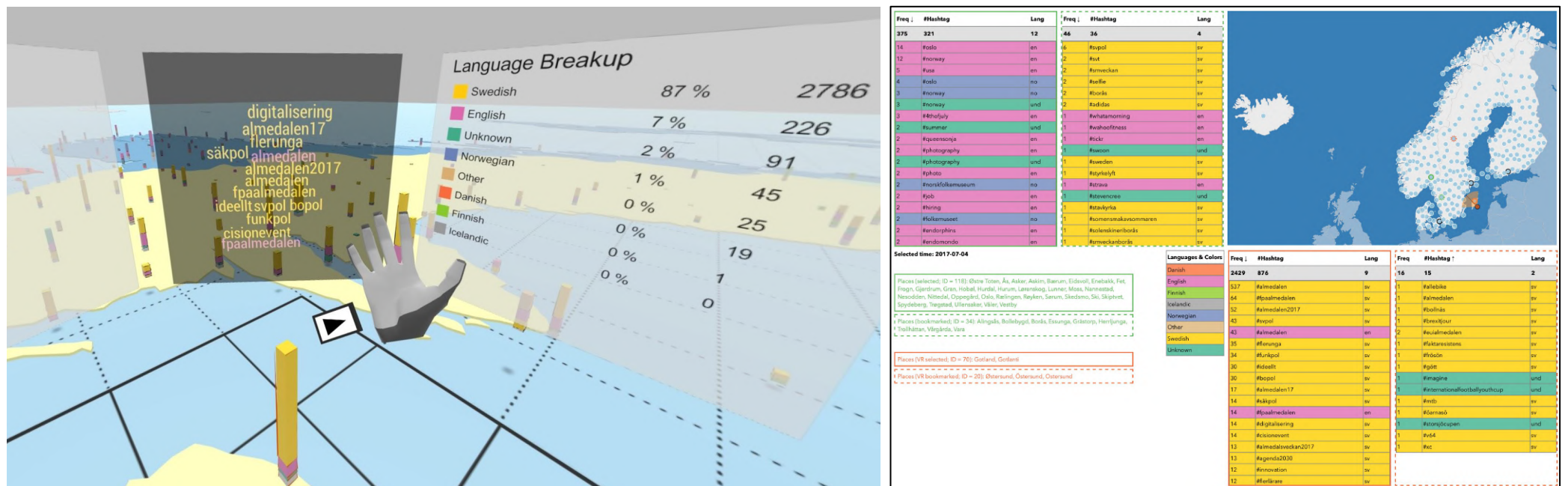


DEMO of a Hybrid Asymmetric Collaborative Immersive Analytics System

Nico Reski, Aris Alissandrakis, Jukka Tyrkkö, Mikko Laitinen, and Andreas Kerren

In the context of using immersive *Virtual Reality* (VR) within the domain of *Digital Humanities*, you are welcome to come check our hands-on demo in room K1081 (see map).

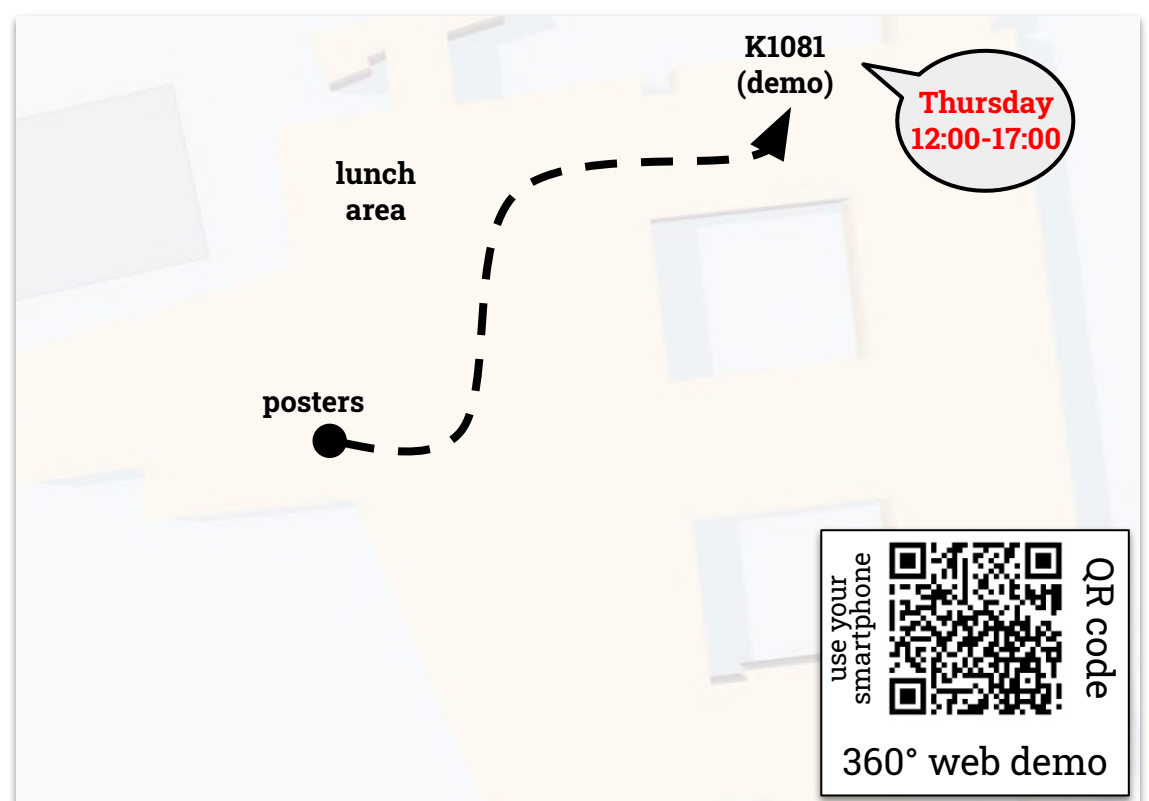


We present a hybrid Immersive Analytics system in order to support asymmetrical collaboration between two users during synchronous data exploration. The system consists of an immersive Virtual Reality application, a non-immersive web application, and a real-time communication interface connecting both applications to provide features to facilitate the collaborators' mutual understanding and their ability to make (spatial) references.

We recently conducted a user case study with pairs of language students, encouraging them to use the developed system for exploring a big multivariate Twitter dataset from a sociolinguistic perspective.

Based on the results of self-reported usability scores, log files, observations, and interviews, we were able to validate the approach in general, and gain insights in the users' collaboration with respect to awareness, deixis, and group dynamics.

This work has been the result of a cross-disciplinary collaboration between researchers from Computer Science and Languages, within the Centre for Data Intensive Sciences and Applications.



- Alissandrakis, A., Reski, N., Laitinen, M., Tyrkkö, J., Lundberg, J., and Levin, M. (2019) **Visualizing Rich Corpus Data in Virtual Reality**. *Corpus Approaches into World Englishes and Language Contrasts (Studies in Variation, Contacts and Change in English 20)*, ed. by Hanna Parviainen, Mark Kaunisto & Päivi Pahta. Helsinki: VARIENG.
- Reski, N., and Alissandrakis, A. (2019). **Open Data Exploration in Virtual Reality: A Comparative Study of Input Technology**. *Virtual Reality*.
- Reski, N., Alissandrakis, A., and Tyrkkö, J. (2019) **Collaborative exploration of rich corpus data using immersive virtual reality and non-immersive technologies**. 2nd International Conference: Approaches to Digital Discourse Analysis (ADDA 2). Turku, Finland, May 23–25, 2019.
- Laitinen, M., Lundberg, J., Levin, M., and Martins, R. M. (2018) **The Nordic Tweet Stream: A Dynamic Real-Time Monitor Corpus of Big and Rich Language Data**. In *Proceedings of the Digital Humanities in the Nordic Countries 3rd Conference (DHN 2018) (CEUR Workshop Proceedings)*. Sun SITE Central Europe Workshop Proceedings (CEUR-WS), Helsinki, Finland, 349–362.
- Alissandrakis, A., Reski, N., Laitinen, M., Tyrkkö, J., Levin, M., and Lundberg, J. (2018) **Visualizing dynamic text corpora using Virtual Reality**. *The 39th Annual Conference of the International Computer Archive for Modern and Medieval English (ICAME39): Corpus Linguistics and Changing Society*. Tampere, Finland, 30 May – 3 June, 2018, page 205.