

---

Visualisation and Exploration of Linked Data Using Virtual Reality -  
Poster

Kellmann, Alexander | Postema, Max | de Keijser, Joris | Svetachov, Pjotr | Wilson,  
Becca | van Enckevort, Esther | Swertz, Morris

Version: Postprint (Verlagsversion)/Postprint (Publisher Version)

Typ/Type: Kongressschrift/Conference Proceeding

Jahr/year: 2023

Quelle/Source: <https://repository.publisso.de/resource/frl:6440389>

Schlagwörter/Keywords: Linked Data Visualisation, DotNetRDF, Virtual Reality, RDF  
Visualisation, SPARQL, Graph exploration

Zitationsvorschlag/ Suggested Citation:

Kellmann, Alexander et al. (2023): Visualisation and Exploration of Linked Data Using  
Virtual Reality - Poster. International SWAT4HCLS Conference 2023. DOI:  
10.4126/FRL01-006440389

Nutzungsbedingungen:

Dieses Werk ist lizenziert unter einer Creative Commons Lizenz  
(<https://creativecommons.org/licenses/by/4.0/>)

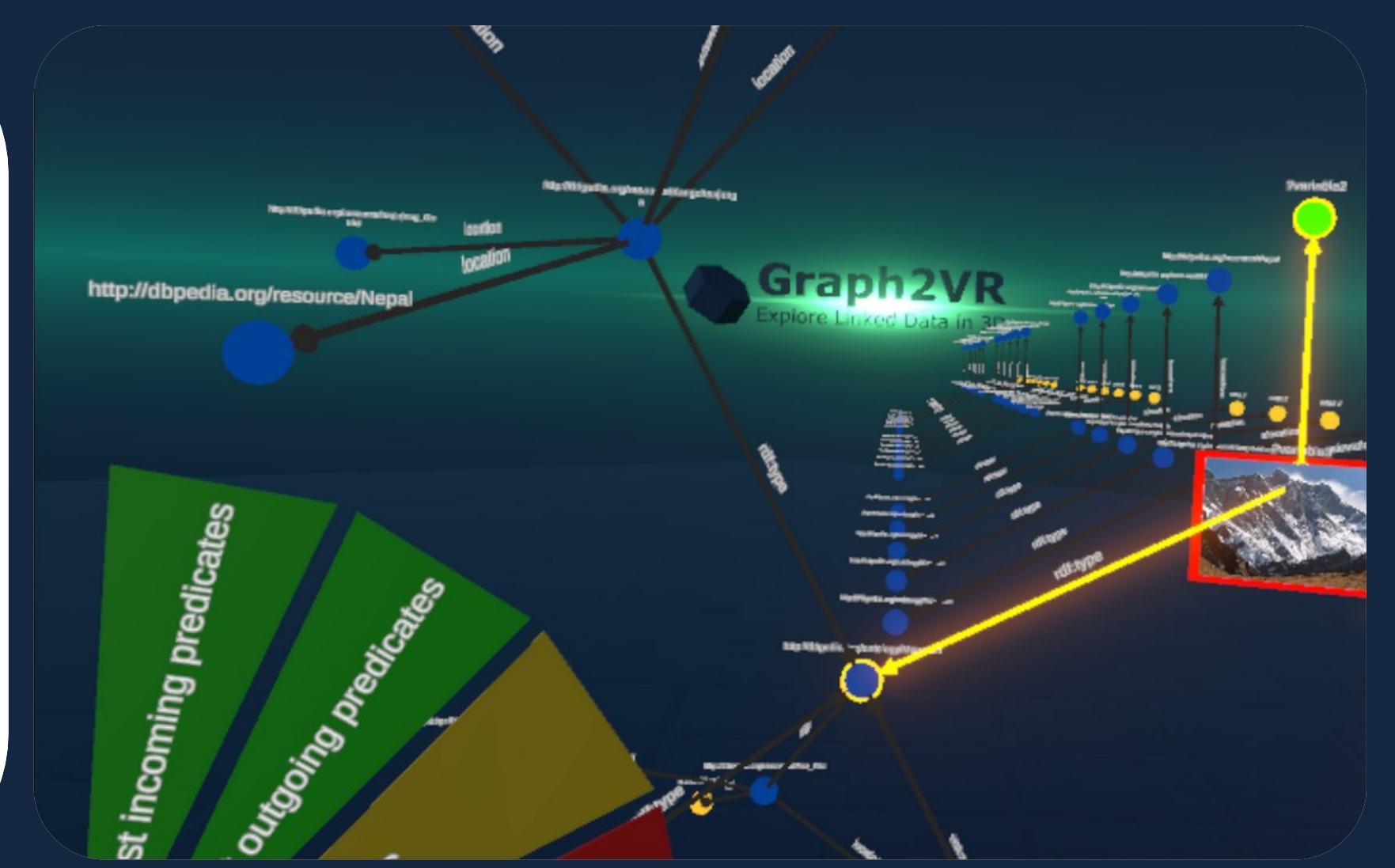
Terms of use:

This document is licensed under creative commons license  
(<https://creativecommons.org/licenses/by/4.0/>)

---

# VISUALISATION AND EXPLORATION OF LINKED DATA USING VIRTUAL REALITY

Linked Data is a best practice method to share and reuse data, in particular complex knowledge graphs. Visual processing of information and structures in large graphs comes naturally to people, and so development of tools for the visualisation of Linked Data has become a field of research interest in recent years. We have reviewed existing solutions and then created a prototype, Graph2VR, to work with graphs in Virtual Reality based on SPARQL queries, with the aim to help scientific applications such as cohort data harmonization.



Bio-/medical data in a VR application with predefined structure



VR Netzer  
2021

Game/tec demo – Graph in a sphere can be zoomed and rotated freely in VR



Toran VR  
2019

Ontologies in 3D hierarchy layout



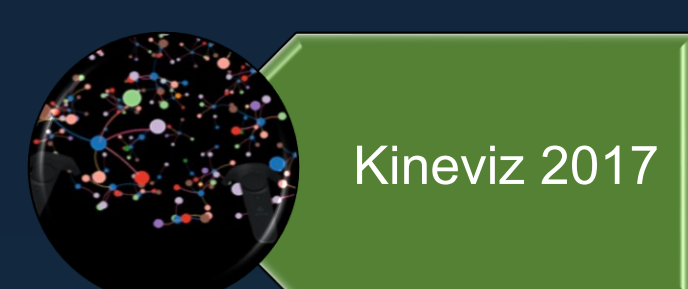
Onto Tec 3D  
2019

Visualisation of graphs in augmented reality using Microsoft HoloLens



Big Data  
Visualization  
Platform  
2017

Visualisation of Neo4j graphs in 3D and also in VR



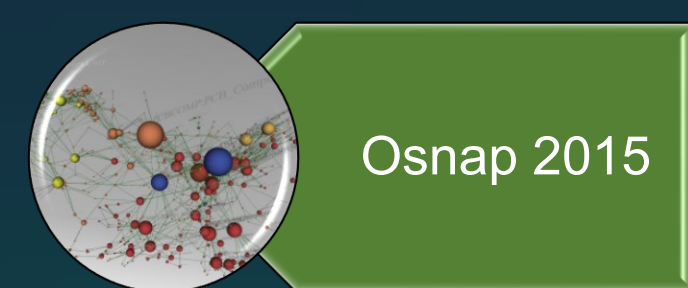
Kineviz  
2017

Visual queries to generate SPARQL queries



Gruff  
2015

Visualisation of ontologies in VR (static)



Osnap  
2015

Visualise Linked Data in GraphDB Expand and collapse the graph



GraphDB  
2015

Find and draw connections over multiple steps



RelFinder  
2009

Algorithms to draw graph networks



OntoSelf  
2007

Fancy visualisation and navigation in 3D networks



Skyrails /  
Interactorium  
2007

2020



Virtualytics  
2020

Data visualisation in a 3D coordinate system in VR



3D Force  
Graph  
2018

Advanced visualisations of huge networks of force directed graphs



Tarsier  
2018

Semantic planes to raise filtered points



Open  
Graphity  
2014

3D graphs with animated packages on the edges

2015



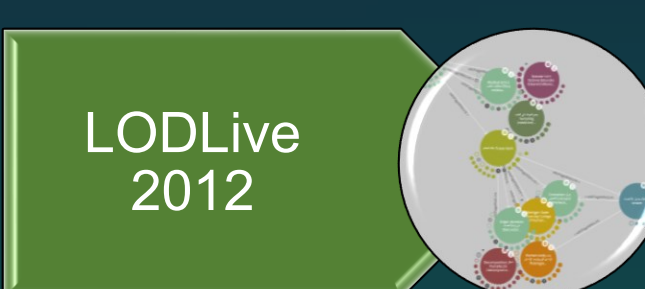
Haylyn  
2014

Visualisation of ontologies in Second Life (VR)



VOWL  
2014

VOWL visualisation and colour schema for colourblind people



LODLive  
2012

Expansion of Linked Data graphs as a web-application



OntoSphere  
2008

Visualisation of ontologies in 3D (Protégé plugin)



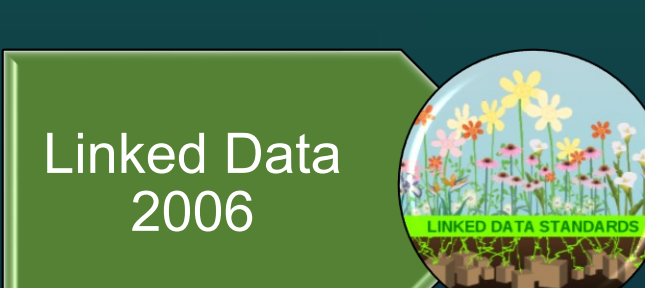
Semantic  
Analytics  
Visualization  
2006

The first visualisation of owl ontologies in VR based on Dot



Virtuoso  
2006

Virtuoso servers are used as triple stores today



Linked Data  
2006

Sir Tim Berners Lee, “inventor of the internet” (http protocol), invents Linked Data

2005

