

**MASTER THESIS** Data Visualization Of Product Relations - An Interactive Virtual Reality Application**STUDENTS** Anton Kemvik and Nils Goksör**SUPERVISOR** Joakim Eriksson (LTH)**EXAMINER** Günter Alce (LTH)

# Data Visualization Of Product Relations - An Interactive Virtual Reality Solution

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POPULAR SCIENCE PAPER **Anton Kemvik and Nils Goksör**

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Advancements in fields such as machine learning have made it increasingly popular to store data from customer purchases and apply algorithms on it to extract useful information. Understanding the relations within products in a product range can be useful for many things, however, the amount of data is often too big and complex to visualize in an intuitive way. This thesis analyses whether Virtual Reality can make relations within the data more comprehensive and provide a good overview of big data.

Consumerism has changed drastically during the 21st century, and today, the market is bigger and competition is tougher than ever before. The growth of consumerism is leading to an increase in online- and in store purchases. Many companies have realised the potential in storing an increased volume of data from purchasing in order to gain a better understanding of customer patterns. What products do our customer purchase? When do they purchase it? Which products are purchased together?

Our stakeholder, IKEA, are currently having issues with presenting this data in an intuitive way that gives the user a good overview of different product relations.

Our Master Thesis, done at Jayway in Malmö for stakeholders at IKEA, covers the development and evaluation of a data visualization application made in Virtual Reality. The final version of the application includes a virtual data cloud visualizing how often different product have been sold and also the affinity between different products. This is done using spheres representing each product and lines between spheres representing affinity.

The application also includes an interactive selection mechanism where the user selects which that should be visualized. The selection mechanism is skyscraper in VR where each floor is a level of IKEA's product hierarchy. The user can select which products from each level he/she wishes to visualize. The selection mechanism is designed to give the user better understanding of how the furniture company categorize their products.

During the project a user centered desing process was followed. The work was done in iterations, and user tests on end users from IKEA were performed to get firsthand feedback and input to improve the application.

This master thesis shows that VR is a great tool for visualizing data. It is particularly good for providing an overview of big data, and for understanding the relations within it. Furthermore, the user tests showed that VR can be a great tool for not only reading data but also presenting it in a way that is easy to understand for people without a background in data analysis.