

GOTTFRIED WILHELM LEIBNIZ UNIVERSITÄT HANNOVER
FAKULTÄT FÜR ELEKTROTECHNIK UND INFORMATIK

Information extraction from articles on the impacts of COVID-19 lockdowns on air quality

*A thesis submitted in fulfillment of the requirements for the degree of
Bachelor of Science in Computer Science*

BY

Quentin Münch

Matriculation number: 10031323

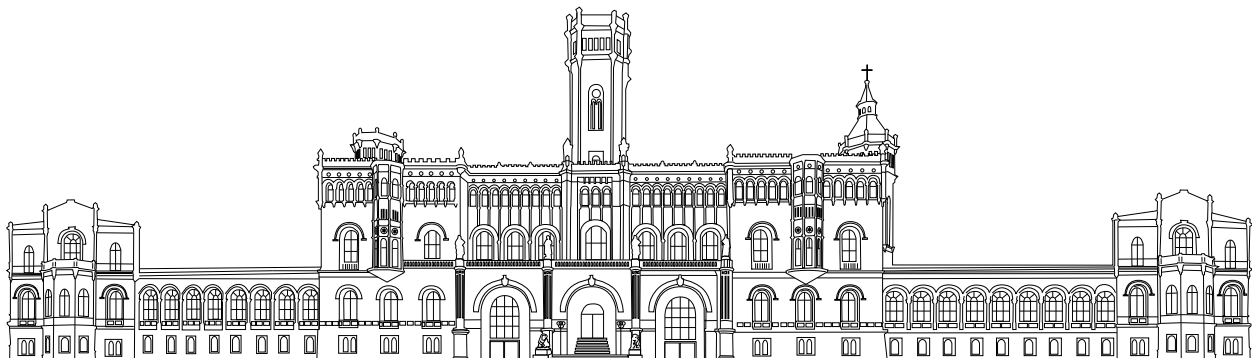
E-mail: quentin.muench@stud.uni-hannover.de

First evaluator: Prof. Dr. Sören Auer

Second evaluator: Dr. Jennifer D'Souza

Supervisor: Dr. Markus Stocker

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Declaration of Authorship

I, Quentin Münch, declare that this thesis titled, 'Information extraction from articles on the impact of COVID-19 lockdowns on air quality' and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
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- I have acknowledged all main sources of help.

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Acknowledgements

XXXXX

Abstract

Your Abstract. Clearly motivate your work (WHY), state what is your problem (WHAT), and describe your solution (HOW). Also, explain how your solution was evaluated (either empirically or formally) and summarized the observed results

Keywords: $KW1$, $KW2$, KWn

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Acronyms

GaV Global-as-View

GLaV Global-Local-as-View

LaV Local-as-View

LSLOD Life Science Linked Open Data

QEP Query Execution Plan

RDF Resource Description Framework

RDF-MT RDF Molecule Template

RDFS RDF Schema

SDL Semantic Data Lake

SSQ star-shaped sub-query

URI Universal Resource Identifier

Chapter 1

Introduction

The outbreak of the novel Coronavirus in 2019 changed everyone's daily life. Due to the virus being very contagious, hygiene became a lot more important and social interactions had to be reduced to a minimum. While the precise measures to reduce the spread of the virus differed from country to country, lockdowns were introduced in almost every part of the world. People were not allowed to go outside unless it was essential for their living. Companies were told to let the employees work from home, so they didn't need to leave the house. Clubs, bars and restaurants had to close down because there were no customers anymore. Considering these and many other points, it is apparent that people were not driving around as much as before the pandemic. Rather they were staying at home, thus considerably reducing their transportation emissions.

Many scientists saw this as a unique opportunity to research how much of an impact such lockdowns have on air quality. While daily life was put on hold because of the restrictions, the streets of major cities were emptier than ever. Many articles regarding air quality have been published, however not all followed scientific methods and reviewing practices.

Chapter 2

Background

This chapter introduces the main topics needed to understand the development of this thesis.

Chapter 3

Related Work

Topics related to this thesis have been extensively treated in the literature. This chapter presents an overview of what has been done

Chapter 4

Approach

This chapter states the problem statement and proposed solution

Chapter 5

Implementation

This section presents your implementation

Chapter 6

Experimental Evaluation

The experimental evaluation is reported in this section. Please, include your research questions.

The research questions addressed by this thesis are: **RQ1)** YYY **RQ2)** XXX **RQ3)** TT **RQ4)** OPP

The remainder of this chapter is structured as follows: First, the used benchmark is described. Second, the data preparation is presented. Afterwards, the setup of the experiment is depicted. Finally, the results are shown and analyzed.

Benchmark:

Metrics:

Implementations:

Chapter 7

Conclusions and Future Work

This chapter presents the lessons learned and future work