

Lucas Lange

RESEARCH ASSISTANT · PHD CANDIDATE

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Summary

I am currently working and teaching as a research assistant while pursuing a PhD in computer science. My research interests align with the common border between data science, machine learning, and privacy - leading me to the topic of "Privacy-Preserving Data Analysis (Machine Learning)". An environment of diverse knowledge exchange is essential to me, fueling the agile prototyping approach I like to adopt when testing hypotheses in my experiments.

Experience

Leipzig University

RESEARCH ASSISTANT (WISSENSCHAFTLICHER MITARBEITER)

[Leipzig, Germany](#)

Mar. 2022 - Present

- Research in "Privacy-Preserving Data Analysis (Machine Learning)" as a PhD candidate.
- Conducting and supervising computer science courses at Leipzig University, especially in the field of databases and data science (tutorials, labs, seminars, lectures).
- Skills: Deep Learning · Data Science · Data Privacy · Research.

ScaDS.AI Dresden/Leipzig

RESEARCH ASSISTANT (WISSENSCHAFTLICHER MITARBEITER)

[Leipzig, Germany](#)

Mar. 2022 - Present

- Within the scope of my position as a PhD candidate at Leipzig University.

InfAI - Institute for Applied Informatics

RESEARCH ASSISTANT (WHK)

[Leipzig, Germany](#)

Oct. 2019 - Feb. 2020

- Working individually on the ShapBiRd project, an effort to create a linked data infrastructure and workflow for the institute's bibliography. — github.com/AKSW/shapbird
- Skills: Python · Docker · Semantic Web

eccenca GmbH

SOFTWARE DEVELOPER

[Leipzig, Germany](#)

Jun. 2018 - Apr. 2019

- Visual Editor Based on SHACL Shapes (Bachelor Thesis).
- Specification and implementation of a visual editor for linked data knowledge graphs - furthermore, adjustable to specific domains by utilizing SHACL shape descriptions.
- Skills: JavaScript · React.js · Semantic Web

InfAI - Institute for Applied Informatics

STUDENT ASSISTANT (SHK)

[Leipzig, Germany](#)

Jul. 2017 - Apr. 2018

- Assisted in the open-source SlideWiki EU Project. — github.com/slidewiki
- Lead an agile software engineering student project at Leipzig University. — github.com/AKSW/Auto-Slides
- Tutored an agile software engineering student project at Leipzig University.
- Skills: Agile Project Management · JavaScript · Java · Semantic Web

Education

Leipzig University

PHD IN COMPUTER SCIENCE

[Leipzig, Germany](#)

Mar. 2022 - Present

- Topic: Privacy-Preserving Data Analysis (Machine Learning).

Leipzig University

M.Sc. IN COMPUTER SCIENCE

[Leipzig, Germany](#)

Apr. 2019 - Jan. 2022

- Thesis: Privacy-Preserving Detection of COVID-19 in X-Ray Images.

Université Grenoble Alpes (UGA)

ERASMUS+—M.Sc. IN COMPUTER SCIENCE

[Grenoble, France](#)

Sep. 2020 - Jun. 2021

- Courses in Machine Learning and Robotics.

Leipzig University

B.Sc. IN COMPUTER SCIENCE

[Leipzig, Germany](#)

Oct. 2015 - Mar. 2019

- Thesis: Visual Editor Based on SHACL Shapes.

Projects

DP-X-COVID

ScaDS.AI Dresden/Leipzig

[GITHUB.COM/LUCKYOS-CODE/DP-X-COVID](https://github.com/LuckyOS-code/DP-X-COVID)

- Privacy-Preserving Detection of COVID-19 in X-Ray Images (Master Thesis).
- The goal of this work was to implement a private image classifier for COVID-19 X-ray images. The model was trained by applying privacy-preserving machine learning procedures to achieve a differentially private model and thus preventing attacks from causing data leakage.
- Skills: Deep Learning (CNNs), Data Privacy (DP-SGD, PATE), Python, Tensorflow/Keras

X-COVID

[GITHUB.COM/LUCKYOS-CODE/X-COVID](https://github.com/LuckyOS-code/X-COVID)

- Detection of COVID-19 in X-ray images.
- Binary (COVID-19 vs. normal): 97.8%, Multiclass (COVID-19 vs. Pneumonia vs. Normal): 94.1%
- Skills: Deep Learning (CNNs), Python, Tensorflow/Keras

SentArg

[GITHUB.COM/LUCKYOS-CODE/ARGU](https://github.com/LuckyOS-code/ARGU)

- Argument retrieval model for Touché @ CLEF 2020 - 1st Shared Task on Argument Retrieval.
- The task was to retrieve and rank arguments from the provided dataset of crawled content from online debate portals for 50 given topics—covering a wide range of controversial issues. We tried to improve our model by factoring sentiment analysis into the ranking scheme.
- Skills: Google Cloud Computing, Deep Learning (NLP), Docker, Python

Publications

SentArg: A Hybrid Doc2Vec/DPH Model with Sentiment Analysis Refinement

CHRISTIAN STAUDTE AND LUCAS LANGE, IN: CLEF 2020 WORKING NOTES

ceur-ws.org/Vol-2696/paper_191.pdf

Further Education

2021	Fundamentals of Neuroscience Part 1 , HarvardX	<i>edX</i>
2020	Deep Learning Specialization , deeplearning.ai	<i>Coursera</i>
2020	Machine Learning , Stanford Online	<i>Coursera</i>
2020	Blockchain A-Z™: Learn How To Build Your First Blockchain , SuperDataScience	<i>Udemy</i>
2020	TRIZ User (Level 1) , Target Invention	<i>TRIZ-Trainer</i>

Personal

Languages German Native, English B2/C1, French B1/B2

Hobbies Fitness, Reading, Hiking, Travel, Cinema

Interests Deep Learning, Data Privacy & Ethics, Data Science, Environmental Issues, Medicine