

# FATHONI A. MUSYAFFA

Dr. rer. nat, Postdoctoral Researcher

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## RELEVANT PROJECTS

### Research Data Management - SFB1208

Deutsche Forschungsgemeinschaft (DFG) Funding

- 📅 01.2021-ongoing 📍 HHU-Düsseldorf, Germany
- Developed a pipeline to improve data quality and **Research Data Management in life sciences**, and implementing workflows for semi-automated metadata extraction.
  - Assisted the use of electronic lab notebooks.
  - Engineered an annotation system and a metadata parsing application for experimental documents, which were part of the broader software development for orchestrating various standards and technologies.
  - Put in place measures to enhance research data quality and devised strategies for the long-term storage of **FAIR research data**.
  - Collaborated closely with other scientists and engineers in developing the pipeline, resulting in a publication in scientific venues.

### PLATOON: Digital PLATform and analytic TOOLs for eNergy

European Union H2020 Funding

- 📅 March 2020-November 2020 📍 University of Bonn, Germany
- Managed local project activities and maintained communication with institutional partners.
  - Participated in the development of a big data platform for energy and smart city sectors.
  - Assisted in analyzing platform requirements, data modeling, and data exchange processes.
  - Employed technologies and methodologies like **RDF, OWL, Linked Data**, Docker, Apache Spark, Agile, and Scrum.

### OpenBudgets.eu: Upload, Visualize, Analyse public budget and spending data

European Union H2020 and DAAD Funding

- 📅 2015-2017 📍 University of Bonn, Germany
- Analyzed heterogeneous open fiscal datasets across different geographical locations and administrative levels.
  - Developed transformation pipelines to semantify fiscal datasets, aligning with the relevant ontologies.
  - Conducted analysis of heterogeneous datasets in collaboration with the project's pilot partners.
  - Undertook research on open fiscal data analytics, data integration, and platform development.
  - Utilized a range of technologies and methodologies including RDF, Semantic Web, Knowledge Engineering, Ontology Engineering, UnifiedViews, **ETL Pipeline, SPARQL**, Virtuoso, Open Data, Github, **Protégé**, and LaTeX.

## EDUCATION

### Ph.D. in Computer Science

University of Bonn

- 📅 10.2015 – 03.2021 📍 Bonn, Germany
- Thesis:** Comparative Analysis of Open Linked Fiscal Data
  - Research Topics:** Ontology Engineering, Semantic Data Modeling and Integration, Open Data

### M.Eng. in Human-Computer Interaction and Robotics

Korea Institute of Science and Technology

📅 08.2010 – 08.2012 📍 Seoul, South Korea

### B.Sc. in Computer Science

IPB University

📅 08.2005 – 09.2009 📍 Bogor, Indonesia

## EXPERIENCE

### Postdoctoral Researcher

HHU-Düsseldorf

📅 10.2021 – Ongoing 📍 Düsseldorf, DE

Devised and implemented FAIR data management strategies for computational biochemistry.

### Doctoral researcher

University of Bonn

📅 10.2015 – 10.2020 📍 Bonn, DE

Devised semantic data (ETL) pipelines to integrate and analyze semantic data within public fiscal data and smart city domain.

### Lecturer

Surya College of Education

📅 01.2014 – 05.2015 📍 Tangerang, ID

Delivered undergraduate lectures for Computer Science (CS students, fostering understanding of foundational CS concepts.

### Software Developer

Maven Lab

📅 01.2013 – 12.2013 📍 Jakarta, ID & Singapore

# RELEVANT PUBLICATIONS

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## Dissertation

- F. A. Musyaffa, *Comparative Analysis of Open Linked Fiscal Data*. 2021.

## Journal Articles

- F. A. Musyaffa, K. Rapp, and H. Gohlke, "Lister: Semi-automatic metadata extraction from annotated experiment documentation in elabftw," *bioRxiv*, 2023. DOI: 10.1101/2023.02.20.529231. eprint: <https://www.biorxiv.org/content/early/2023/02/21/2023.02.20.529231.full.pdf>.
- F. A. Musyaffa, M.-E. Vidal, F. Orlandi, J. Lehmann, and H. Jabeen, "Iota: Interlinking of heterogeneous multilingual open fiscal data," *Expert Systems with Applications*, vol. 147, p. 113 135, 2020.
- F. A. Musyaffa, C. Engels, M.-E. Vidal, F. Orlandi, and S. Auer, "Experience: Open fiscal datasets, common issues, and recommendations," *Journal of Data and Information Quality (JDIQ)*, vol. 9, no. 4, pp. 1–10, 2018.
- F. A. Musyaffa, F. Orlandi, T. Dong, and L. Halilaj, "Openbudgets. eu: A distributed open-platform for managing heterogeneous budget data," 2017.

## Conference Proceedings

- F. A. Musyaffa, J. Lehmann, and H. Jabeen, "Cross-administration comparative analysis of open fiscal data," in *Proceedings of the 13th International Conference on Theory and Practice of Electronic Governance*, 2020, pp. 459–468.
- F. A. Musyaffa, "Towards comparative analysis of open fiscal data," in *Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance*, 2018, pp. 644–647.
- F. A. Musyaffa, L. Halilaj, Y. Li, et al., "Openbudgets. eu: A platform for semantically representing and analyzing open fiscal data," in *Web Engineering: 18th International Conference, ICWE 2018, Cáceres, Spain, June 5-8, 2018, Proceedings 18*, Springer International Publishing, 2018, pp. 433–447.
- F. A. Musyaffa, F. Orlandi, H. Jabeen, and M. E. Vidal, "Classifying data heterogeneity within budget and spending open data," in *Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance*, 2018, pp. 81–90.
- F. A. Musyaffa, L. Halilaj, R. Siebes, F. Orlandi, and S. Auer, "Minimally invasive semantification of light weight service descriptions," in *2016 IEEE International Conference on Web Services (ICWS)*, IEEE, 2016, pp. 672–677.
- J. Mynarz, J. Klímek, M. Dudás, et al., "Reusable transformations of data cube vocabulary datasets from the fiscal domain.," in *SemStats@ ISWC*, 2016.

Managed full-stack development processes utilizing Java, MongoDB, and various other technologies.

## Research Assistant

### Korea Institute of Science and Technology

 08.2010 – 08.2012  Seoul, KR

Participated in research and development activities related to a 3D display and recommendation system.

## AWARDS

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### Doctoral Fellowship

#### German Academic Exchange Service (DAAD)

 05.2005 – 03.2020  Germany

### Master Fellowship

#### Korea Institute of Science and Technology

 08.2010 – 08.2012  South Korea