

# Question Answering for Tenancy Disputes

PI: Michel Dumontier, Postdoc: Kody Moodley

Legislation concerning apartment rental contracts and tenancy is generally not well understood by the tenant. This often leaves them vulnerable to exploitation by property owners and housing agencies. The main recourse for tenants when disputes arise, especially over monetary issues, is to seek professional legal advice which is invariably time consuming and often exceeds the tenant's affordability. Despite advances in smartphone and mobile application technology, which have revolutionised the way we access and process information to improve our everyday lives, the legal domain has been slow to embrace this trend. Nevertheless, tenancy legislation has at least made the transition from physical (hard copy) formats into the digital realm. However, the data remains buried in free text documents in repositories and databases across the Web.

The student will develop a mobile application for tenants which leverages this knowledge to automatically answer questions about disputes concerning their tenancy. This application will empower the layperson in understanding their rights regarding specific legal disputes concerning their tenancy, thereby simplifying an unnecessarily complex aspect of everyday life. Common examples of questions that the system will answer are:

- Is it legal for my landlord to charge me fees for maintenance of my apartment building?
- Can I terminate my apartment rental agreement via email?
- Am I entitled to compensation if my landlord has not returned my deposit within the agreed time after moving out?

Our proposal for this system will require machine learning (deep-learning), natural language processing as well as ontology-based automated inference.

## Publications:

1. Adebayo, Kolawole John; Boella, Guido; Di Caro, Luigi; Neural Reasoning for Legal Text Understanding. JURIX (International Conference on Legal Knowledge and Information Systems), 175-178, 2016.
2. Yang Yu, Wei Zhang, Chung-Wei Hang, Bowen Zhou, Empirical Study on Deep Learning Models for Question Answering, Computing Research Repository, 2015. **Cited by 3**
3. Cristian Cardellino, Milagro Teruel, Laura Alemany, Serena Villata. Learning Slowly To Learn Better: Curriculum Learning for Legal Ontology Population. Thirtieth International Florida Artificial Intelligence Research Society Conference (FLAIRS 2017), 2017.
4. Radboud Winkels and Rinke Hoekstra, Automatic Extraction of Legal Concepts and Definitions, Legal Knowledge and Information Systems: JURIX, vol 250., p157, 2012. **Cited by 16**
5. Rinke Hoekstra, Joost Breuker, Marcello di Bello, Alexander Boer, LKIF Core: Principled ontology development for the legal domain, Law, Ontologies and the Semantic Web: Channelling the Legal Information Flood, vol. 188, p21, IOSPress, 2009. **Cited by 73**