aDecentWeb

LIGHTENING TALKS

Participant	Talk Description
Josiane Xavier Parreir https://www.linkedin.com/in/josixp/ Siemens AG Austria	**Iotcrawler - A Decentralized Search Engine For The Internet Of Things** We present the IoTCrawler project, which addresses search and discovery for the Internet of Things. Given the sheer amount of IoT devices and the data they generate, service discovery, search, and access methods for the IoT are indispensable. IoTCrawler offers an adaptable, decentralized and dynamic solution for IoT data integration, covering the different steps for enabling IoT search, from discovery and semantic description of data and services, to distributed indexing and ranking methods.
Terry Payne https://cgi.csc.liv.ac.uk/~trp/Home.html University Of Liverpool	**Evolution Of Inter-operable Agents** In this talk, I will discuss existing paradigms for addressing interoperability between heterogeneous autonomous systems, from the discovery of ontology alignments between agents vocabularies, to the evolution and adaptation of the vocabulary itself. A vision for autonomous agents will be presented that evolve their vocabularies and ontologies to facilitate rational interoperation, together with opportunities and challenges.
Angela Bonifati http://liris.cnrs.fr/angela.bonifati/ Lyon 1 University	**Declarative Linked Data Anonymization** Privacy is a major concern when publishing new datasets in the context of Linked Open Data (LOD). A new dataset published in the LOD is indeed exposed to privacy breaches due to the links to other datasets. In our work, we have considered privacy and utility policies as queries and conceived algorithms to produce sequences of SPARQL anonymization operations to apply those policies. Given a set of privacy queries as input, we have also studied the data-independent safety problem in practice.
Tobias Kuhn http://www.tkuhn.org/ VU University Amsterdam	**Decentralized Semantic Publishing With Nanopublications** Nanopublications have been proposed as a format to publish small semantic snippets of scientific results in a provenance-aware manner, but they can also be seen as a general Linked Data container format. I will show in this talk how nanopublications can be combined with cryptographic techniques to enable general-purpose decentralized publishing and querying of machine-interpretable knowledge.

Participant	Talk Description
Sascha Meckler https://www.scs.fraunhofer.de/de/referenzen/digi-ort.html Fraunhofer SCS, 90411 NÜrnberg, Germany	**A Data Integration And Communication Platform For Distributed Healthcare Software Systems** Efficient healthcare services require a frequent data exchange between the patients and their families, their doctors and the nursing personal, as well as associated software systems. The talk presents the concept of a communication platform for interconnecting distributed healthcare-related software systems. The platform uses semantic data integration for querying metadata and provides an intermediary Identity Provider that manages the patients,ÄÔ data access policies and delegates authorization.
Pascal Molli https://sites.google.com/view/pascal-molli University Of Nantes	**DeKaloG: Decentralized Knowledge Graph** DeKaloG follows the vision of a global decentralized knowledge graph. It promotes 3 principles and a sustainable approach for implementing them: Accessibility is the right to execute any query at any time on a KG and get complete answers. Transparency ensures the right to know who built the KG, how it was built and from which sources. Findability is the right to find efficiently pertinent KGs for a query, i.e. Which KGs contain relevant facts for the query.
Amr Azzam WU Wien	**Democratizing Access To Decentralized Knowledge Graphs** We propose an approach to combine SPARQL endpoints and client-side query processing, in an optimal, decentralized manner: we believe that a hybrid approach to query processing, that combines RDF partition shipping, TPF intermediate results shipping, and full endpoint results shipping, could provide a stable and responsive public query interface, even for data providers that do not have access to highly available servers, therefore lowering one of the main entry barriers to serve Linked Data.
Andrei Ciortea http://andreiciortea.ro/ University Of St. Gallen	**Rethinking Multi-agent Systems For The World Wide Web** Recent standards are turning hypermedia into a homogenous information fabric that interconnects everything: physical objects, documents, abstract concepts etc. Clients can not only browse, but also observe and act on this hypermedia fabric. We present our vision for a new class of multi-agent systems that are: 1) aligned with the Web architecture to inherit the properties of the Web as a world-wide, open, and long-lived system, and 2) transparent and accountable to support acceptance by people.

Participant	Talk Description
Daniel Schraudner https://mosaikprojekt.de/ Friedrich-Alexander University Erlangen-N√ºrnberg	**MOSAIK ‚ÄìÄì A Decentralized Multi-agent System Built On Semantic Web Technologies** We present the publicly founded research project MOSAIK, which has the goal to build a decentralized, self-organizing mas to supersede existing centralized systems in companies. Bosch, a project partner, delivers a concrete use case: we want to investigate how to build an adaptive, self-organizing shop floor and use Semantic Web technologies for the infrastructure. Our main approach is using the concept of stigmergy and trying to shift most of the complexity from agents to the environment.
Katja Hose http://katja-hose.De/ Aalborg University	**A Reliable Web Of Data** The Semantic Web provides access to vast amounts of data covering diverse domains. Unfortunately, it relies solely on the data providers to publish their datasets through either downloadable data dumps, SPARQL endpoints, or dereferencable URIs. Because of this centralization, data is often not available, e.g., Unavailable SPARQL endpoints. In this short talk, i will highlight these problems and sketch a possible solution based on P2P technologies (PIQNIC, https://relweb.cs.aau.dk/piqnic/).
Ruben Taelman https://www.rubensworks.net/ Idlab, Ghent University, ÄÎ imec	**Scholarly Communications Using The Decentralized Web** We envision an alternative scholarly communication system that is aligned with Decentralized Web concepts and technologies. In this vision, researchers use a personal domain and associated storage space as their long-term scholarly hub, and the core functions of scholarly communication are fulfilled in a decoupled manner. We propose a technical exploration into the nature and feasibility of such a scholarly communication system, to enable a decentralized and decoupled scholarly Web.
Simon Steyskal Siemens AG, Austria	**Towards Querying In Decentralized Environments With Privacy-Preserving Aggregation** The web, as it was envisioned originally, is a free, decentralized platform. However, in recent years, this vision of a decentralized Web has become less and less emphasized, and the Web has been growing increasingly more centralized. For these reasons, there is a push for re-decentralizing the Web, to give people back the ownership of their data (cf. Solid). In this talk, we share our vision on querying in decentralized environments in an efficient and privacy-preserving manner.

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Vishwajeet Pattanaik Tallinn University Of Technology, Estonia	**Leveraging The Power Of The Crowd To Save The Web** Motivated by the ever-rising facing the Web, we propose a naive DOM-oriented edit distance anchoring approach implemented into a web annotation tool. We argue the tool, could help foster the creation of an end-user collaborative environment that could help tackle these threats; by allowing web users to contribute to improving the quality of textual content on the web by annotating, archiving, linking, sharing and semantically describing content on-the-fly.
Axel Polleres WU Wien	**The Role Of Decentralisation For Holistic Digital Eco-systems** Open Data eco-systems are becoming a major priority in the EU on both European and National levels for both enbaling the a data-value chain, but also as a pillar for Artificial Intelligence strategies. In this talk i will argue that decentralisation and the ability to control own, sensitive data assets decentrally is not only attractive on an individual but also at an enterprise level as well as in the interplay between governments, (small and medium) enterprises and citizens. That is, infrastructures for personal data stores, which have become popular in the context of privacy-preservation on an individual level, could also be leveraged in order to link small and medium enterprises in a decentralised fashion with each other or with public administrations, etc., thereby transferring the MyData idea to an enterprise level. Through this way decentralized platforms, also different bodies of public administrations could interact more efficiently with both enterprises and citizens. We envision that promoting such platforms, along with dual principles of (sensitive) data minimisation and (open) data maximization, could be en enabler for a functioning data-value chain as a true alternative to centralized state- or enterprise-controlled data silos.