Introduction, Related work, Preliminaries(Knowledege Bases and Web services)

- **URI** - an identifier of a real-world entity such as an organisation, a person or an abstract concept.
- **Name** - a human-readable string that identifies the entity.
- **Literal** - a string, a date, or a number.
- **Class** - corresponds to a set of entities, such as the class of singers or the class of cities.
- **Relation** - holds between two entities or between an entity and a literal.
- **Fact** - An element of a relation, written r(x, y) to say that the entity with URI x stands in the relation r with the entity with URI y.
- **Knowledge Base(KB)** - a collection of facts.
- **Domain(of a relation)** - the class from which all first arguments of its facts are taken.
- **Range** - the class of the second arguments.
- **Inverse of a relation r** - written r^- , if $\forall x, y : r(x, y) \Leftrightarrow r^-(y, x)$
- **Functional Relation** - A relation in which no two distinct facts share the relation and the first argument
- **Functionality** - $fun(r) := \frac{\#x:\exists y:r(x,y)}{\#x,y:r(x,y)}$
- $\lambda_f(x)$ - root of call result from a given Web Service f
- Edges are labeled by the label of the target node
- $l_1/.../l_n(x, y)$ - there is a path along edges $l_1...l_n$ between x and y

Schema Discorvery

It's about discovery, not about data completion

Probing

- Use entities from KB with the same type as input type from the WS
- In WS with multiple input types $t_1...t_n$:
  1. Find "Important" entities of type t_1 in KB
  2. Find entities of types $t_2...t_n$ connected to entity for t_1
  3. Probe WS with entities from step 2

Path Discovery

Path Alignment

View & Transformation Function Construction