1. Objective

Analyzing the relation between researchers in a domain is possible via representing the authors of papers in that domain by a directed graph (DG). Thus, we can find/visualize the highly influential researchers in a domain.

The main objectives of this project are:

- **O1.** to construct a network of researchers where the nodes represent the authors of the selected scientific publications,
- **O2.** to analyze the generated researcher network using social network analysis methods to examine the relations between researchers,
- **O3.** to develop a tool to search and browse the network in accordance with these relations (e.g. the influencers),
- **O4.** to provide a REST API that makes the results of this analysis available.

The following image illustrates a sample research network in a molecular communication domain, where darker colors indicate higher influence:
2. Description
The following provides some guidelines for the main objectives:

O1: There are several resources that provide well documented APIs to fetch information about scientific publications: PubMed API, Elsevier Article Metadata API, Springer Nature API, PLOS API, ArXiv API, and IEEE Xplore API will be utilized for accessing metadata of scientific publications.

O2: There are numerous social network analysis (SNA) metrics that provide useful insights regarding a network, such as in degree, out degree, betweenness, and eigenvector centralities. There are several libraries that provide these functionalities.

O3: There will be a user-interface to facilitate the selection criteria and observe the results of the network analysis.

3. Required Skills
- Experience with REST API
- Python
- Web application

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