Imran Asif

Email: sheikhimranasif@gmail.com **DOB:** 28th July 1987 **Nationality:** Pakistani **Tel:** 07466 965437

Education:

PhD (2018-Present) Computer Science, Heriot-Watt University, Edinburgh, UK.
Thesis submission in November 2021.

M-Phil (2011-14) Computer Science from Quaid-i-Azam University, Islamabad, 2014 (3.80 CGPA)
Title: Semantic Versioning of In-Process Research Thesis [1]

BS(CS) (2006-10) Computer Science from PMAS Arid Agricultural University, Rawalpindi Pakistan[1] , 2010. (3.83 CGPA)
Project Title: Payroll Management System using Bio-Verification

Research Interests:

My research interests lie in the semantic web, semantic web tools, Knowledge Graph and, semantic publishing such as Nanopublications and Research Objects. As a final year PhD student, I will submit my PhD thesis under the title *"Using nanopublications as Ledger of Digital Truth"* in November 2021.

In my PhD, I worked mostly on nanopublication which is the minimal unit of storing the scientific statement as a claim and its provenance. The nanopublication (nanopub) has been proposed to represent the scientific statement as a claim and results and produce them uniquely identifiable, accessible, attributable, citable as an individual nanopub and reusable. Nanopublications also provide researchers with incentives to make their data available in standard formats that drive data accessibility and interoperability. Nanopublications are also useful for those who are not domain experts and can obtain the relevant information from the dataset using simple knowledge of SPARQL. 10M nanopublications have been published in the life science domain. However, it has been shown that there are some issues with the quality of these publications in terms of the detail of the provenance provided [2].

I had proposed a Nanopublication Retrieval Framework to support the topic-based discovery of nanopublications. To overcome the challenge of different IRIs being used to publish the claim of a nanopublication, we have investigated different approaches to group the nanopublications based on their topic IRI and verified the correctness of our approach. The implemented system allows a user, e.g. a bench scientist, to search over the collection of nanopublications, using either an IRI or keyword search term, which is then mapped to a topic IRI, to discover the timeline of scientific discussion on a particular topic. The timeline can be created due to the immutable nature of the nanopublications and would allow a scientist to see the progression of scientific knowledge on a given topic [3].

I also worked on the social science CoDa (contains the experiment results to show how, why and when human cooperate with each other's) databank[2]. Social Scientists face difficulties to cite and identify

[1] Pir Mehr Ali Shah Arid Agricultural University, Rawalpindi, Pakistan.
[2] https://data.cooperationdatabank.org/

conflicting observations, and we resolved these issues by converting the CoDa databank data to nanopublications. Researchers are struggling to keep pace with the literature and efficiently make comparisons between the results of different published studies. We hypothesise that the difficult and time-consuming process of searching and comparing results across research publications can be facilitated using machine-readable, standardised knowledge representation methods. To this end, we propose to exploit Nanopublications as the standard framework to represent the claims in research studies and use provenance data expressed by the model as an indicator of the source of the contradiction between different claims [4].

Work-Related Skills: Computing Programming Language:	**Object Oriented** (Java: Advanced, C#: Advance, Python: Advance, C++: Medium, ASP.NET: Advance, MVC: Basic, VB.NET: Advance, Node.Js: Medium), **Scripting** (jQuery and JavaScript: Advance), Bootstrap CSS, XML, Jena API, Protégé, SPARQL, RDF, RDFS, OWL, Jupyter Notebook, RDF4J, PHP. **Databases:** Microsoft SQL, MySQL, MongoDB, Neo4j. **Knowledgebases:** Jena Fuseki Server, GraphDB, Virtuoso

Full Scholarship/ Stipends:

09/2018—09/2021 James Watt Scholarship - Heriot-Watt University [3]

Lab/Tutor Experience:

09/2018-Present I am Lab/Tutor helper in the Heriot-Watt University in Mathematics and Computer Science department with several courses.

Supervision Experience:

01/2016 - 08/2018 Supervising NUML students for their final year project related to web/desktop and mobile development and their research-related projects.

01/2014 - 12/2015 Supervising Quaid-i-Azam university students for their final year project related to web development.

12/2013 - 02/2014 I was supervising students of FAST University for their data mining semester project. I introduced them to the data mining techniques and algorithms and also supervised them to implement those in their semester projects.

06/2012 - 11/2013 I have co-supervised MSc. Computer science students for their final year projects. These projects were related to web application development and deployment. The projects were related to Google maps, digital libraries, semantic web and other related fields.

Publication List

[1] Asif, I. and Karim, M.S., 2014, April. Semantic Versioning of In-Process Scientific Document. In Information and Communication Technology-EurAsia Conference (pp. 119-128). Springer, Berlin, Heidelberg.

[2] Asif, I., Chen-Burger, J. and Gray, A.J., 2019, July. Data Quality Issues in Current Nanopublications. In 2019 IEEE 15th International Conference on e-Science (e-Science). IEEE.

[3] Asif, I., and Gray, A.J., 2021. Topic Extraction and Timeline of discourse from Nanopublications (Writing Journal).

[4] Asif, I., Ilaria Tiddi, and Gray, A.J., 2021. Using Nanopublications to Detect and Explain Contradictory Research Claims. In 2021 IEEE 17th International Conference on e-Science (e-Science). IEEE.

[3] https://www.hw.ac.uk/schools/engineering-physical-sciences/research/james-watt.htm