

Supervision meeting - 11 Aug 2020 - Georges Mbella Essomba

Date	11 Aug 2020
Research Student	Georges Mbella Essomba
Student ID	109001350/2
Doctoral Research Project	Develop a machine learning algorithm and model for translating plain english text (requirements) into codes of a given programming language (e.g. python)
Project type	PhD
Project mode	Part Time
Project start	24 Sep 2018
College	College of Science & Engineering
School	Informatics

Supervision notes

Meeting

Participants

Georges Mbella Essomba
José Miguel Rojas Siles
Mohammadreza Mousavi

Date, time and location

Meeting date

11 Aug 2020

Meeting time

11:00

Location

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

We reviewed the RQs provided by Georges and supervisors provided the following feedback:

Combining Web Services (WS) and Microservices (MS) has disadvantages because there are existing survey already on WS and it would make the research complex and challenging given the timescale of the PhD and the key milestone of the Probation meeting due to take place in 6 months.

Recommend focusing the survey on something that can be covered.

Fine to read few papers on WS not do an entire literature survey on that

Have a very clear definition of MS and what differentiate them from WS

Define the scope of the study very clearly

Nail a definition for MS. Not the gap between WS and MS. Look into MS. Look at paper to understand/gather generic ideas.

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

1. New RQ2 (What are the characteristics of microservices?) should be replaced by previous one about patterns (What are the common patterns of microservices?) which could be done by looking at papers
2. Look deeper to refine the word pattern to try and come up with more research questions. For instance look at different ways of composing microservices. What are the platforms used? Confine their scope to look at existing literature
3. Refine RQ3 (How to map user-defined requirements (templates) to microservices patterns?) and RQ4 (How to automate the composition of microservices into an application?) to refer to existing literature that could be useful for the survey
4. Come up with search queries, inclusion/exclusions criteria
5. Provide the context of the research: Why is the research question important? How do you plan to conduct your research so that whatever you do lead you to a concrete answer to your RQ? Flesh out RQs and add a rationale for why they are interesting. What you are going to do to seek answers for them and they are going to be materialized

Accompanying files (optional)

Supervision meeting - 21 Aug 2020 - Georges Mbella Essomba

Date	21 Aug 2020
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Discussion notes (researcher)

RQ2 and RQ4 - advantages and limitations: may imply subjectivity. How does one define objectively advantages and disadvantage of one approach over others? Need to consider context

What's good about RQ4 ("What are approaches of composing microservices") is that it contains the keywords "microservices composition" which is the main research topic. It is more technical, objective

RQ2 and RQ4 looks similar. No clarity of what differentiate them

Need clarity on what's the difference between microservice composition patterns and approaches.

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

Need to understand the problem, understand, the situation, the field which should help refining the RQs

Supervisors advised to look into examples of papers (start from seed papers) that talk about microservices composition

Come up with reasonable search query to find 10 or so MS composition

Be critical where you spend your efforts

We tried the following query: "microservice composition" OR "microservice pattern" and got 14 results. Supervisors picked up the following two as good ones based on title and advised to look into it in details.

- A microservice composition approach based on the choreography of BPMN fragments by Pedro Valderas, Victoria Torres, Vicente Pelechano

- Architecting with microservices: A systematic mapping study by Paolo Di Francesco, Patricia Lago, Ivano Malavolta

Supervisors advised to decide where I would like to invest time reading. Focus only on relevant studies.

Researcher to send his inputs to supervisors before scheduling the next meeting

Accompanying files (optional)

Supervision meeting - 11 Sep 2020 - Georges Mbella Essomba

Date	11 Sep 2020
Research Student	Georges Mbella Essomba
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Georges Mbella Essomba
José Miguel Rojas Siles
Mohammadreza Mousavi

Date, time and location

Meeting date

11 Sept 2020

Meeting time

11:30

Location

Virtual

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

Reviewed the research questions and search queries. Supervisors feedback was that the RQs and queries needed refining

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

Finalize research questions

Accompanying files (optional)

Supervision meeting - 30 Sep 2020 - Georges Mbella Essomba

Date	30 Sep 2020
Research Student	Georges Mbella Essomba
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Georges Mbella Essomba
José Miguel Rojas Siles
Mohammadreza Mousavi

Date, time and location

Meeting date

30 Sept 2020

Meeting time

13:00

Location

Virtual

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

I presented the samples papers that I have identified to use as seed papers to be used to validate my queries and inclusion/exclusion criteria.

The supervisors commented that some of the papers were not of good quality. From the list they picked one example of good paper ((A microservice composition approach based on the choreography of BPMN fragments, Valderas et al., 2020)in relation to my RQs and another one that wasn't a good one to help me understand what I should be looking for.

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

Come up with a list of seed papers that would enable me to test my queries and IC/EC

Accompanying files (optional)

Supervision meeting - 23 Oct 2020 - Georges Mbella Essomba

Date	23 Oct 2020
Research Student	Georges Mbella Essomba
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Georges Mbella Essomba
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Mohammadreza Mousavi

Date, time and location

Meeting date

23 Oct 2020

Meeting time

10:00

Location

Virtual

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

I shared the new refined list of seed papers with the supervisors. A total of 16 papers. I then presented 3 papers out of the 16 to dive deep on the approach of microservices composition presented therein. The supervisors acknowledged that the papers presented were relevant to the RQs but advised to gather more information while reading the papers on the advantages and limitations of the proposed approaches as it would be key information for the systematic literature

review. Supervisors also advised to try and add more papers but equally said that 16 was already a good number for the pilot phase.

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

Complete the pilot that is have a final list of papers, validate queries and inclusion/exclusion criteria

Accompanying files (optional)

Supervision meeting - 06 Nov 2020 - Georges Mbella Essomba

Date	06 Nov 2020
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Supervision notes

Meeting

Participants

Georges Mbella Essomba
José Miguel Rojas Siles

Date, time and location

Meeting date

06 Nov 2020

Meeting time

17:00

Location

Virtual

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

I met with Jose and presented the work that I have done since the last meeting which included:

Identifying more seed papers (25) and features to extract from the papers including: i. composition method ii. Description of the composition approach iii. Experimentation iv.

Strengths/Weaknesses/Limitations v. Architecture patterns vi. Technologies & Frameworks.

Supervisor (Jose) advised to capture detailed information of the frameworks and think about how this will contribute to answer my RQs. What will help me in this paper to come up with new knowledge/new approach). He commented that from what he has seen I was making progress.

I also informed the supervisor of a family emergency which will impact my progress. He advised to speak to Joe about it.

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

Finalize the pilot

Start the study (run search queries to retrieve papers of interest)

Apply IC and EC

Review the papers

Start writing the systematic literature review

Accompanying files (optional)

Supervision meeting - 11 Jan 2021 - Georges Mbella Essomba

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11 Jan 2021

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13:00

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Discussion notes (researcher)

I presented the work that I have done since the last meeting for which the main points are listed below:

- Finished reading the seed papers (24 in total) and identified the features that are to be captured to help answer the RQs
- Validated the search query by ensuring that all the 24 seeds papers could be found from the selected databases

- Started filtering out non-relevant papers by applying the inclusion/exclusion criteria from reading the titles and abstracts
- Started drafting the SLR report with the Background and Related Work sections already completed.

Supervisor discussion notes**Agreed action points (to be completed after the meeting)**

For the next meeting we agreed that:

- Complete the le filtering of relevant papers for the study
- Write up the research method section to give supervisors more substance to critically review the work and provide informed feedback.

Accompanying files (optional)

Supervision meeting - 01 Feb 2021 - Georges Mbella Essomba

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Participants

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Date, time and location

Meeting date

01 Feb 2021

Meeting time

09:00

Location

Virtual

Meeting format

Video conference

Meeting notes and files

Discussion notes (researcher)

I presented to Jose what I have been working on since we last met including:

- Applied IC/EC to the initial list of papers retrieved by the search query
- Reading the papers shortlisted for deeper understanding and accurate filtering
- In total I had 135 papers shortlisted and had read 60 already.

Jose asked what I have learned so far from the papers I had read. I tried to answer on a paper by paper basis, an approach that Jose felt was not efficient.

Supervisor discussion notes**Agreed action points (to be completed after the meeting)**

Jose advised that I should try to summarize key learning from all the books I have read so far and then come prepared to discuss those in our next meeting, an approach that he advised would help me understand better the features of interest in the books in respect to my RQs, and put me in a good position to start writing.

Accompanying files (optional)

Supervision meeting - 21 Apr 2021 - Georges Mbella Essomba

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09:00

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Discussion notes (researcher)

I presented the progress/results of the SLR since our last meeting. They provided the following feedback:

- I should look to provide fine-grainer grouping of composition approaches as choreography and orchestration they felt was too high level
- Provide high-level grouping of the frameworks as they felt there were too many and appeared to overlap.

They advise leveraging an existing taxonomy of microservices to achieve the above

- In terms of the empirical study of microservices they advised looking at examples provided in the included papers of the SLR rather than using the ones in GitHub. The only challenge with that as I told them is there weren't enough example to look at as most were theoretical in nature

Supervisor discussion notes

Agreed action points (to be completed after the meeting)

As above

Accompanying files (optional)