

## WASP Cloud Computing Course:

### Assignment

This assignment requires you to write an essay on Cloud Computing and how it relates to your research. Please only use diagrams/illustrations if necessary, and **do not** count these towards the length of the essay. **The essay should be a minimum of 2.5 A4 pages in length, and a maximum of 3 A4 pages in length.** The font should be Times New Roman (or equivalent) and 11 point.

The essay should be structured as follows:

- 1) Begin with an introduction/abstract to your research and topic area. This should be a maximum of 200 words.
- 2) Choose four topics from the following list:
  - Distributed storage (e.g. HDFS etc.)
  - Batch processing (e.g. Hadoop and/or MapReduce)
  - In-memory distributed processing (e.g. Spark)
  - Stream processing (e.g. Storm, Spark Streaming, etc.)
  - Edge and Fog computing (e.g. OpenFog etc.)
  - Serverless computing (e.g. Lambda, Google Cloud Functions, etc.)
  - Containers/Kubernetes/OCI etc.
  - Energy efficiency (in computation and/or data centers)
  - Economics of Cloud

For each of the four topics you have selected, discuss your understanding of them. Describe areas of opportunity (new research challenges, commercial opportunities, application of Cloud to existing solutions for a defined benefit, etc.) with regard to these topics and your area of interest/research. *This should be approximately 1.5 A4 pages in length.*

**NOTE:** If you cannot relate Cloud to your research area - or otherwise struggle to find connections - then instead extend section 3 immediately below (i.e. write 2.5 pages on future trends in Cloud).

- 3) Discuss your thoughts regarding the future trends and directions of Cloud. *This should be approximately 1 A4 page in length.* You can choose the topics/nature of the discussion, but could include:
  - Impact of 5G / IoT
  - Use of predictive analytics
  - Energy efficiency and environment
  - Government regulations
  - Security and its impact
  - Edge and fog computing – is this a natural evolution of Cloud?
  - Serverless – what will it impact?

- etc.

### **Submission**

Please submit your essay as a PDF file to the

**Please submit your report/essay on the course Canvas page. Find the submission by selecting the Course page, and clicking “Assignments” on the menu bar.**

**Deadline: 26<sup>th</sup> May 2021**

### **Assessment Criteria:**

Assessment will be light, and papers will be judged either “pass” or “fail”. A pass will occur when your paper is deemed to show original work and thought (i.e. do **NOT** copy/paste from any source, even if you are referring to a paper/article) and is of the required length.

### **Other information**

Please put your name and affiliation on the first page of the report.

The intention is to collect all reports, turn them into a single document, and publish on Canvas for every student on the course to download and read (if they so wish). If you do NOT want your paper to be included in this, then please attach a separate file explaining this decision (just write “Please do not including my paper in the published document” in a text file). You can easily do this by simply creating a zip file with both your paper and a text file inside, and uploading that as your submission.

*This is intended as a light piece of work – do not over think it, just give your thoughts and perspectives. However, also be serious and show you have given this some effort (i.e. don’t be lazy and provide no insight).*

If you have any questions, please email me: [paul.townend@umu.se](mailto:paul.townend@umu.se)

Thanks for attending the course!

Paul