# Viva Questions

This document contains a lists of questions I came up with by myself during the viva preparation process, starting mid December. The questions are ordered by their type e.g. whether they are more technical, or related to the overall contribution or deal with consistency / narrative of the thesis, etc.

Note that there are NO written answers to these questions because this list of questions act as a practice guide, where the intention is that the questions are given by freely speaking without lot of formal preparation – after all I do not really know what's coming during the viva.

An important inspiration was the book “How to survive your viva” by Rowena Murray. Another source of inspiration for many questions was a highly critical reading of my own thesis, which proved to be highly valuable.

# Contribution

What is the original / unique research contribution (to knowledge) of your Ph.D. / thesis?

What do you think is the most valuable contribution of your Ph.D. / thesis?

# Coherency and Narrative

You say in the introduction that the central theme of your thesis is purity but in Chapter 8 “Concurrent ABS” you ‘sacrifice’ purity for the sake of parallel ABS by utilising STM. Why did you sacrifice purity? Why do you make purity the central theme but then violate it?

# Technical

Why do Monads NOT compose?

What exactly are Arrows?

What exactly are Monads?

Reader: partial function application

Writer: monoid

State: closures

Lists: non-deterministic programming

# Weaknesses of your thesis

comparison with imperarive approaches: how do i really prove that they are insufficient for verification and validation? Performance comparison is difficult but thats in the end the only Thing that really matters in Simulation. couldnt we have achieved that all not also with oop using some STM and property-based testing library, only with better performance?

Methodology! i never received any useful training on that Part. its more a piecing together of loose bits and pieces into a coherent narrative.

i started out with simple curiosity for the Problem without clear hypotheses / Research questions. This means, that there was never a real-world problem my PhD wanted to solve. I had to “find” real-world problems to which my research seems applicable and a potential solution, otherwise I couldn’t “sell” my results / research / approach.

chapter 5 no publication, how do i know its ok?  
I was thinking about publishing the work of chapter 5 but I thought I’d focus on more interesting stuff e.g. STM and QuickCheck. The problem is that this is probably technically the most advanced chapter in the whole thesis, therefore the only viable audience would have been FP community but the review to Haskell Symposium made it clear that the gatekeepers have not patience for rather applied stuff as I do. I could have developed something in the direction of pure functional objects, following the final tagless approach as I did in section 5.2.5.1. but then I would have needed to look into a lot of theory of coalgebras, codata and so on because with a simple “ad-hoc” approach without some super fancy theory, I would have wasted my time trying to publish at an FP journal / conference.

Chapter 7: should have used criterion as well but then there would not be this differentiation between 3 different output types