



BA/SA:

Abstract – Model – Analyze

A wisely modelled problem should be as realistic as possible while for theoretical considerations it also needs to be as abstract as necessary. The goal of this thesis is to take some recent event of your choosing (e.g. something you read in the newspaper), abstract away the superfluous details, come up with a mathematical model, and analyze its properties.

Examples would be:

- The rise of the value of bitcoin - how could the system be modelled in order to explain this behavior?
- The glass ceiling problem, defined as “the unseen, yet unbreachable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements.” - can we model this, e.g. as a dynamic social network, and come up with some sort of “glass ceiling theorem”?
- A game-theoretic model for elections: Different parties have different goals - who should cooperate and how will this affect the outcome?



It is important for you to come up with a problem yourself. This thesis will enhance your “critical thinking” skills and might be particularly interesting if you’re planning to pursue a career in academia. In research, it is one of the main tasks to come up with interesting and groundbreaking problems, models and (hopefully) also solutions.

If that sounds interesting to you, do not hesitate to contact me so we can have a chat.

Requirements: Interest in system design and mathematical modelling. Experience in one programming language (e.g. Python, Java) is beneficial.

Interested? Please contact us for more details!

Contact

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