Weekly Presentation: Review and Future Plans

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Why do a PhD (in Complexity Science)?

Why do a PhD?

- My parents dreamed when they were young.
- I was not satisfied with ending my student career with what I learned during undergraduate and graduate studies.
- I would like to pursue an academic career and that is a prerequisite.

Why do a PhD in Complexity Science?

- Starting with a cyberviolence against me (opinion dynamics).
- I realise that a lot of things happening in our real world can be explained from a complex systems perspective.

Plans for My PhD

- Research:
  - Mathematical models (potentially through statistical physics modelling approach) that can explain the complex interactions between individuals in a social system.
  - Computational models (through agent-based modelling approach) that can explain how social contagion shapes smoking and vaping trends among the population in the UK, and some implications for policymakers and the public.
  - Some publications...
- Teaching: e.g., TA, Marker, Undergraduate Supervision, etc.
- Engagement: e.g., Edinburgh Complexity, etc.

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Goals for My PhD

- Research:
  - Become an independent researcher after structured training.
  - Become a well-prepared candidate researcher for academia.
- Teaching: Rich experience in teaching and supervision prepared for an academic career.
- Engagement: Some exposures of the organisation and management of academic events.

Career Goals

I believe that mathematics is the most powerful tool for understanding the logic and rules behind the running world, but we still need computational tools to answer many questions that mathematics cannot answer.

- In the short term, I hope to be an outstanding rising star in the field of Complexity Science.
- I am not sure which department should I apply for an academic position since Complexity Science is not just about Informatics and Mathematics...
- But I hope to work on real-world problems with complex systems thinking, especially those concerning social systems.

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- Motivation
- Objectives: A Specific Research Question
- (Loop Starts)
- Real-World Context and Available Data
- Method (Model): Mathematical and/or Computational?
- Model Calibration and Validation
- Model Predictions
- (Loop Ends)
- Conclusions, Discussions, and Suggestions for Future Improvements

What Do I Need?

- In the next two months or so, I plan to read more papers in a structured way (and it definitely needs to be organised with your help).
- More discussions with you both in a timely manner in order to stick to more feasible ideas.
- You propose $\rightarrow$ I propose.
- Make progress on tiny things while always keep the big picture in mind.
- Structured technical training.
- Soft Skills Training.

The End

Thank you very much for your time!