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Q&A: The day a big data scientist met a development organization

February 22, 2013 by [Milica Begovic Radojevic](#)

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28

5



Benjamin Renoust

*I met [Benjamin Renoust](#) at the [Masters of Networks](#) event that brought together network scientists, policy makers and data analysts to discuss **open policy making**. Benjamin was part of the team that addressed a predefined set of challenges, to help us analyze the value of big data for development organizations (in this case internal, operational data from implementing development projects).*

We recently [published results of our collaboration](#). In the meantime, we talked to Benjamin about his professional work and plans.

Q: Big data seems to be the buzzword of the day. What inspired you to focus your PhD work in data mining?

BR: Today's technology allows us to store and measure more information than we ever

could before. By itself, information on this scale is hard to grasp, so we need tools to understand what lays behind it.

There's a lot of work from taking a big data set and turning it into an understandable representation. The process tends to narrow and limit the amount of information at each step.

The final steps interest me especially – visualizing the data, not just to see the obvious trends but in way we can bring serendipity, bring the unexpected.

To do such visual analytics, we need to go back and forth from the models (the informational part of the process), and the visualization (the human part of the process).

I am working at [LaBRI](#) with a team of experts whose research is dedicated to visualization of relational data: **networks**. Networks are fascinating since they are part of most complex systems in the world. Networks are perfect objects for visual analytics.

You can draw them, enhance them with extra information and make them interactive. The first thing people want to do with a network visualization is to explore it – and thanks to LaBRI, we have just the right tool for it, [Tulip](#).

So this is what my PhD work is about, and I am inspired by my mentors, [Marie-Luce Viaud \(of Ina\)](#) and [Guy Mélançon \(of LaBRI\)](#). They taught me how to extract networks from field data – such as news information (Marie-Luce is leading the [OTMedia](#) project, an amazing observatory of news data) – and bring users relevant analysis that they can interact with and discover the unexpected.

The most interesting part is to support **storytelling** with visual data analytics (that fits very well when studying news excerpts).

Q: What motivated you to attend Masters of Network and devote your time to analyzing data even after the event?

BR: [Alberto Cottica](#) (of the [Council of Europe](#)) organized the [Masters of Networks](#) with the excellent idea of teaming up policy makers and data analysts. We are working with Alberto on a different project ([MD, emergence by design](#)) and he invited to contribute to the event as network analysts.

It was a unique opportunity to apply some of our models. We could confront them with field data, and even generalize them to meet policy makers' needs.

That's where I met you, [Millie](#), crunching newly-released [World Bank data on contract awards](#). Together we prototyped a visualization of some of the World Bank data ([Tulip used with python](#) is amazing for quick prototyping such visualization).

As scientists, we tend to not really understand what is behind the data we use, and just showcase our models on it – and it doesn't always transpose. End-users tend to overestimate models and overinterpret the results of a visualization.

So communication is key to narrow our analysis and identify specific technology to apply to specific data to answer a specific part of a question. We do not yet have a magic wand to just process the data and deliver a final visualization.

This team work went so well, we plotted together to go further even after the event.

With a shared interest and open-mindedness to each other's fields of work, it was a delight to work together and learn even more.

Q: Your analysis of World Bank data from a social network perspective attracted quite a lot of attention. What piqued your interest about this project?

BR: The topic – understanding how resources are distributed to suppliers and how they may form a consortium for a better chance of winning contracts – tickles our “noble spirit” as it is an actual contribution to society. In addition to the [open questions](#) that came out, I also learned that even if we use machines to process data, humans are at the centre of the visual analytics. A guarantee for great results is to form a mixed team with a good ability to understand each other's needs and skills.

Q: Based on this experience, what would you recommend to development organizations interested in collaborating with data scientists like yourself? (No need to be diplomatic 😊)

BR: In addition to the importance of communication and open-mindedness, I would also add:

- Make sure you are clear on the questions you have in mind. Think big, and don't limit yourself to the available data. It is the data expert's job to figure out how the data can be used to answer these questions. It may turn out that you don't have the proper data to answer your questions, but it's valuable to identify what data you would need to gather.
- Take time to explain what data you have, how it was collected, and what you are looking for.
- Data processing is not a black box: Ask for explanations of how we transform the data. You don't need to be a specialist to follow the process.
- Each step of data processing and simplification makes our models rely on more approximations – basically you lose a part of the information for the sake of understanding. It is critical to understand the boundaries of your final representation.
- Try to understand the right question your system can answer – it's usually only a part of a bigger question you asked initially.
- Since we are all specialists in our own different areas, with our own taxonomy, we need to find a trade-off between flexibility and rigor: some may call a cat a feline, but does it matter when discussing architecture?
- When using visual analytics for decision making, don't rely on solely a number or a picture, and never forget, [correlation and causation are two very different things](#).

Q: And finally, what's next for you after you're done with your Phd?

BR: The idea would be to pursue research by going back and forth between application and research. We have a lot to share from research, but as much to learn: when we go “in the field,” it forces us to see things differently, and ask ourselves different questions. We need to be knowledgeable and creative in order to propose solutions.

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Millie • 6 months ago

Cari, thanks for the comment. This is one of those examples how our organization can benefit from partnering with those we don't traditionally speak to- the new avenues and doors that it opens, the perspectives it triggers spill over to everything else we do.

^ | ▾ Reply Share ›



Cari • 8 months ago

What inspires Benjamin is exactly what would inspire me if I were pursuing a PhD in this field - discovery and storytelling. This post makes me appreciate that peering deeply into data is no different than peering deeply into the heavens, oceans, human body, etc. It all seems to be about making sense of something vast and complex. (Which explains the importance Benjamin puts on the questions asked in the process.) I like knowing there are people out there who are excited about and dedicated to this kind of sense-making! Thanks for taking the time to bring others into this conversation. Eye-opening...

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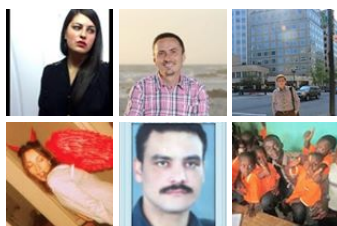
Milica (a.k.a. Millie) is working on [social innovation for development](#) in [UNDP Europe and Central Asia](#), exploring micronarratives, data for development, including for conflict prevention, and many other extraordinary topics. [@ElaMi5](#)

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