

How studies in signal processing shaped my personal career

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Thank you for the opportunity to speak to you on a very exciting topic. The topic of this speech was how studies in signal processing has shaped my career. And when I think about it, I thought about what to speak of, as I've studied engineering, I took it literally so it is really about what my career is, and how has it been shaped by studies. So just what did I study?

So first of all I met Yrjö when I was at the end of the third year and I was looking for a Master of Science thesis work, and I had heard about this excellent research laboratory of signal processing in Tampere University, and I sought for a short introduction to Yrjö, met him and asked if I could join and do a master's thesis, so I ended up doing it, and it was then a completely new topic, which is nonlinear signal processing.

First on median processing on still images as a master's thesis. And then once I did that, then I was thinking about whether I should actually go to a real job or whether I should continue my studies at Yrjö's lab. I decided it was not that hard of a decision so I decided to continue as a PhD, studies a little bit more complex. So it got three dimensional. So it's vector median processing of video images. So there was a kind of two dimensions: one dimension on the vector the median side, and one dimension more on moving images instead of still images.

And then, post that, at the very end of the studies, I already decided to join Nokia. That time, there was a consumer electronics side, which was then actually doing television for those of you who are younger and do not necessarily remember but that was then the biggest division in Nokia, and supposedly the growth area of the future. So there I went, and the first job really was actually taking the algorithms that we had developed during my PhD thesis and actually turn them into an actual real product. So taking that algorithm simulated in a such a way that it actually would fit into a TV context and then taking it actually on a signal processing chip on silicon to be introduced in upcoming HDTV products. Long story short, the HDTV didn't happen and the chip itself did happen, but it really didn't have much of a success.

Then I joined the mobile phone side of Nokia, actually after consulting Yrjö who had already by then joined Nokia he was one of the very few people I called I was abroad and made a call back to Finland, I had decided to come back, and it was time of the recession in Finland, and it was not the easiest thing to find a job in Finland, and I was wondering on any leads, any kind of good ideas where somebody like myself could find a good job.

And I guess I hadn't made a completely bad impression during my study. So I think I got a little bit of a introduction through Yrjö and so I got a job. This time as a product marketeer, and this actually is kind of a first reference back to the studies, how they actually shape my career. So obviously the first step was pretty much of a linear step, many people have done this.

This was a side step, and actually during my studies, I had all along studied not just the signal processing but also industrial economics, and I remember having a discussion

with Yrjö after the Master's thesis was done and we were considering whether I should continue on the PhD side, and the discussion went something like that, that he was challenging me: "Are you really serious about this, since you are studying all this economics side as well", and I convinced him that it's a good idea. And so I did, and then that actually came to play on the next big part of my career at Nokia and then post that, actually as I was going I was going to work for a private equity company post Nokia as well, so a big part of that was there.

Then the next side of the signal processing complex thinking was when I joined a company called Interdigital which is actually doing basic research. It was like going back to the roots and very much of a signal processing side, kind of mobile algorithms and so on, I still was more on the management and kind of commercial side, but I very much needed to understand, and there, certainly having the three dimensional vector median and moving images capability helped me a quite a bit. Another thing which is actually kind of an interesting coincidence and, I'll come back to this a little bit later, touch upon this a little bit later as well, during my studies where we were a very international group as we've heard already today and it was lots of cooperation around the world, one of the places where we actually visited and had cooperation with, was University of Rennes which happens to be a cousin city for Tampere, and we actually, at Interdigital we've actually bought the the video research at Rennes.

So I had at least a lots of street credibility of actually having been there more than 20 years before visiting the laboratory, having done a PhD in video processing, and it worked out actually great. And now, as you heard, the latest job is at Vaisala. Now, going back to the topic. So how did my studies in digital signal processing impact my career. I think more, even more when I reflect back. It's more than the digital signal processing side. It was actually the studies side that impacted my career, and then I go back on how was the research group that Yrjö had in Tampere?

The first thing I would bring up is it was international The ambition level was to be the best in the world. It was not 'local' It was not 'best in Finland'. But it was 'Global'. All the collaboration was around the world and for a 20-something-year old it was kind of eye-opening on raising the bar and thinking about the world completely differently that than what one would have thought otherwise. The other thing is the international team, the nature of the team and, at that time living in Tampere, that was not the norm. I tell you that having an environment with top-of-the-class people from around the world, working language English, it set the tone on how I perceived the world. A second thing I would bring up is selecting the team, building the team, and creating a team. A team is much stronger than an individual. I don't think I would have made PhD ever without the research team and that kind of a second learning is, a team is much stronger than an individual. Third thing would be leadership. Lead by example, lead by questions.

So Yrjö was genius, actually whenever I had technical trouble. He never gave me answers, but he always knew what were the right questions, and I think that was much better than giving the answers and not everybody can do that. Then, creating the right environment to succeed. It's bringing the right people, setting the right bar. It's about the leadership. But it's also about the atmosphere. It's about creating the enthusiasm and the curiosity that many people have talked about today. It's also about creating fun and a place where you want to be. And when I reflect back on my career, these are actually the things that have shaped my career probably even more than the topic that I studied and these are the things that I have tried to carry with me and and it's like having a management training program in the laboratory when I worked there, and it has been a privilege.

I really thank you, Yrjö, for all that and I continue to be very-very thankful!