

Different places

Anja Stedjeberg Hansen

Smart, Connected and Livable Cities
December 2016

«It has become appallingly obvious that our technology has exceeded our humanity.»
– Albert Einstein

Anders Fredriksen was working late again, some might even say it was early this time of day. He quickly glanced to his right where his friend Nina Simonsen was listing sources for a research paper. They were both doctorates on their second year, him in the field of cybernetics and robotics, and her in computer science. They could hear the wind howling, but it was warm inside, despite the fact that they were working in one of the oldest buildings on campus. A storm was forming outside, throwing clustered pieces of snow at the windows, brilliantly contrasting the pitch black sky. They could hardly see Nidarosdomen anymore, just the lit up church spire. The radio was buzzing quietly in the background, and they could hear a man's voice state in awe that the 46th US presidential election finally had come to an end. «Kanye West has won the election! Look at Kim, North, Saint and little Rain, they must be so proud...» Anders turned it off while sighing, he squinted at the clock. 5:45 am. He felt drowsy, but he didn't want to give up now - he was almost there, he could feel it. He continued making adjustments on the small piece of technology attached to his right index finger. It was about the size of a pin's head, so he had to look at it through a microscope. From time to time he lifted it up to a specific point in the air right in front of his computer screen. Roughly half an hour and 35 attempts later he froze - his hand awkwardly positioned in the air in front of him blocking the view of the church spire completely. «It worked.. Nina, it really worked!»

A little more than half a century later Liv Hamre looks out of her window with a clear view to the same green spire. For a second she is blinded by the bright sunlight and piercing blue sky. She can hear loud sounds coming from the living room mixed with the laughter of a child. She swiftly walks through the hallway and towards the sound, only to find her six year old daughter, Andrea, sitting on the luminous white couch eagerly watching cartoons. Andrea laughs and yells for her mom to move so that the miniature galloping horses can run freely around the living room. There are three of them, two white and one brown, they gracefully float through the room with trails of light and stars following them. Flowers are growing from thin air in what must be dozens of different colours, illuminating the wall behind them. The living room is big, with windows reaching from the floor to the ceiling, and the white luminous couch is placed in front of the spot where the cartoons are running.

«We have to go now, Andrea.» Liv said, noticing the disappointed look on her daughter's face.

«But this is my favourite show! I don't want to go now» she says absently while staring at one of the white horses which had stopped right in front of her.

«We're not going to sit inside watching the virtucast all day, you know that. So come on.»

«Okay..» she says, correcting her pink glasses as they almost slide off her nose.

Andrea pushes herself off the couch, and the second her feet touched the floor the manifestation of horses and flowers vanishes, leaving the white wall behind it plain and unlit. She stumbles towards the hallway to put on her shoes. Liv follows, slowly passing framed live shots of Andrea, floating just a few inches from the wall.

«Can I bring these home, please, can I?» Andrea smiles, while showing a couple of colourful pens she is holding in her right hand.

«Yes of course, but you'll have to carry them yourself.»

As Liv locks the door by swiping her thumb over the finger print sensor, Andrea starts drawing on the pavement in the courtyard. As she lays down her finishing pen stroke, the drawing comes to life, depicting a flower with petals blowing in the wind. One by one the petals vanish, and after a few seconds the drawing is gone, as if it was never really there at all.

Nina slowly looked up at Anders, her mouth half open in awe.

«What do you mean it worked?» she said, her voice insecure. She snapped her laptop shut, and walked over to Anders' desk. He was still sitting with his hand lifted awkwardly, as if he was touching something invisible right in front of his computer screen.

«I'm saying that the hardware works! Do you know what this means?» he blurted out in excitement. He swiftly grabbed a pair of what looked like regular glasses from his desk top and handed them to Nina.

«This hardware will revolutionise everything. No more gloves or lumpy equipment, now we finally have the chance to integrate this technology seamlessly into people's every day life!» he continued

looking at the point in space right next to where his hand was, «my reality right now is that there's a lightbulb hanging from the ceiling right in front of me, and I can really feel it, just have a look.»
Now Nina was starting to get the grasp of the breakthrough, she quickly put on the glasses and her face lit up into a brilliant smile.
«You did it!» her voice was a pitch higher than usual, «now let me try, let me try!».

«That was a really nice flower, Andrea, you're really good at making live art!» Liv is looking at the spot on the ground where the flower had just been.

«Thank you.» Andrea replies, her voice a little smug.

Liv takes her daughters hand as they start walking away from their house and towards the city centre. They pass a lot of houses similar to theirs, all well held wooden houses in various colours. Practically every single one has magnificent flowerbeds with roses or tulips facing the street, once in a while they can even see a house or two with peonies. Those are the most expensive ones to program because of the incredible level of detail, and thus a pretty rare sight. Flowers were ordered by season. Every year on the first of May the field engineers visit the households who wants flowers in their garden to gather measurements and data. And every year on the first of September the flowers disappear like clock work. As the scene shifts from suburban to urban, they are getting closer to the big, red and round building that is Studentersamfundet. They can see that the students have already started promoting their next theme party.

«Wow, look at Samfundet today, mom!» Andrea can't take her eyes of the building. the ground in immediate proximity to the red wall is filled with small banks of sand, and miniature palm trees are growing out of the windows. Above the entrance, giant letters made out of what looks like coconuts say *Beach Party 28.08.75*. Andrea jumps over a pile of sand when they pass the magnificent building. Just a few seconds later they cross the Elgeseter bridge and leave Samfundet behind. They can see they are approaching a traffic jam on the other side. A service vehicle and two men in dark blue suits are what's causing the disturbance.

«What is happening, mom?» Andrea looks at the men while raising her eyebrows.

«Well, I don't know.» Liv starts, but then she sees what the men are working on. They are standing in front of a stop sign, computers in hand, evaluating what they have to deal with.

«Those are field engineers, Andrea. Can you see that stop sign over there, the one they are looking at?» Liv points towards the sign.

«Yes, but what are they doing with it?» Andrea asks.

«They are fixing it, they are fixing the code on their computers. The sign is buffering, if you look very closely when we pass you'll probably see a glitch in the manifestation. They have to fix that so that it won't just vanish some day. It would create a lot of chaos» Liv explains.

Andrea seems a bit confused by this, but as they pass the sign they clearly see the disturbance in the manifestation. The stop sign which is normally bright red, has faded in colour, and in the upper right corner something is not as it should be, the sign is grainy in a way.

«But does this happen a lot?» Andrea looks curiously up at her mom.

«This is a common fault in all manifestations, and is bound to happen sooner or later.» Liv said, while remembering some of the more unpleasant buffering incidents she had witnessed. One Sunday morning a couple of years ago she had stumbled upon a lagging head floating in thin air. It took the investigative engineers forty-five minutes to find the rest of the body stumbling around in the city centre.

A loud thud abruptly woke the professor, he had had fallen asleep in his chair again. Anders had dropped his finished first draft of his research paper on his messy desk. His office was small with a tiny window, only a small beam of light was let in by a couple of heavy green curtains. Oak bookshelves covered every inch of the walls, and they were all filled to the breaking point with books, reports and research articles. Confused at first, the professor looked at at Anders before picking up the paper. His eyes squinting as he rapidly read through the abstract on the first page.
«Ahaa, you finished it already?» he looked surprised, non of his students had ever been that productive before, and especially not the ones working with experimental research.

«I had a major break through, I've tested it a few times already, and my interactive implant really works.» Anders said, he knew how it sounded. Most people expected him to spend several years on his research, some didn't think he would make it at all.

«This will revolutionise the way we use VR forever! It's so limited today, okay, the video game industry makes billions of it and it's used for advanced simulations, but the potential is so big and unexplored. This will eliminate all exterior equipment, we'll be able to incorporate VR experiences in our everyday lives and..»

The professor held up his hand for silence and stopped Anders mid-sentence.

«I agree, Anders, if you have managed to do what you say you've done, this is beyond what we can imagine. It is big enough to put NTNU and Trondheim on the map, and not to mention your own name.»

The professor folded his hands and stared into the green curtains, as if he was studying something far away on the horizon.

«What is your vision, Anders? Where do you want to take this?» He asked seriously.

«Professor,» Anders paused for a moment, «my vision is to introduce the use of VR in every day life. My implant is so small that it can be injected into every single fingertip without issues.

Technology has come far when it comes to the size of VR-glasses as well, they look like ordinary glasses today, and I've even heard rumours about VR contacts. The possibilities this opens up for are endless, in a hybrid world we can use VR to change the way society is structured. Imagine never having to make another superfluous item, take traffic signs - they can be virtual, programmed into reality, the savings on material and labour costs alone would be incredible. And I bet that as technology gets better we would be able to imitate human emotions and abilities as well.» Anders paused, «I want to officially present my findings on the technology fair in the end of November, that's my chance to spread my message to the right people.»

The professor folded his hands in deliberation for a couple of seconds before nodding.

«Yes, I think you are right. I'll recommend you to the board during our meeting next Friday.»

As they continue their journey through the streets of *indreby*, Liv notices the architecture for the first time in what feels like for ever. Tall beautiful buildings surrounds them from all sides, every single one trying to stand out with some kind of special feature or trait. When they reach the square she can see her favourite building, *Trondheim Torg*. It's actually a shopping mall, but it has a stunningly beautiful appearance. It is white as snow, and it's dynamic in shape, like the walls never stand still. The walls consist of several square shaped disks floating a few inches from each other. On them commercials and names of different stores are floating around, leaving trails of light for a couple of seconds. Suddenly Liv feels something pulling on her sweater.

«Mom, can I have a cupcake? Pleeease, can I? Can I?» Andrea was already walking towards the nearest bakery.

«Yes, we'll go get one»

They enter the bakery and walk towards the counter. The cupcakes look delicious, topped with pink, yellow and white frosting applied in the shape of roses.

«What can I get for you, dear?» The woman behind the counter asks pleasantly. As she turns to look at Andrea her right earlobe lags for a split second, that's how you recognise a fake one Liv thinks to herself.

«I want the yellow one, please» Andrea replies.

«Virtual frosting or regular?»

«Virtual»

The two taste the same, but the virtual one is cheaper, and less extravagant in real life. Andrea grabs one from the counter and sits down at the nearest table. Liv pays for the cupcake before joining her. They sit in silence in the little cafe, looking through the window at the people passing by. All of a sudden Liv feels an aching sensation in her left eye.

«What is it mom? Are you alright?» Andrea looks at her mother with a worried look on her face.

«No, it's nothing, I've just gotten something on my eye» Liv keeps on blinking but it doesn't get any better, and now she can feel the drops of salty tears start running from it.

«I'm going to have to take out my virtutact and clean it» she said while pressing her index finger and thumb towards her eye to get a hold of the contact lense. While balancing it on her finger Liv fumbles to find the lense container in her purse.

«Noo!» she blurts out, she hadn't been paying attention, and her virtutact fell to the floor. For a brief moment she couldn't make sense of what she was seeing, one eye being without the contact disturbed her vision significantly.

«Oh honey, I just lost my virtutact, we're going to have to head home and get a new one» she says, while removing the other one as well, it was better not to have anything at all. As she is putting her other contact in the container, Andrea is playing with something on the table top.

«Look, mom! Isn't it nice?» she says.

«What honey?» Liv looks at the empty table, the cupcake was long gone.

«My drawing»

Andrea is sitting there, with the pens she brought in her hand looking confused.

«Aaha, I can't see the drawings you make now because I'm not wearing my virtutacts anymore, but I'm sure it's nice though!» Liv pause for a brief second, «I think we should head on home now, don't you?»

Andre nods and heads for the door, before opening it she turns around and waves at the wall behind the counter.

«Bye» she says, and steps out.

«Bye» replies the voice of the waitress Liv can no longer see behind the counter. Chills run down her spine, it is not something she ordinarily cares about, but then again she had never really tried going without her contacts for a longer period of time either. She quickly follows Andrea and they start walking across the square. Suddenly Liv stops, something wasn't right, where was the magnificent white building she always stopped to admire during her errands in town? It was now replaced by a dull brick building. It looked almost like the ones she had seen in old history books depicting public buildings from the early two thousands. And this wasn't the only one, all of the buildings they had passed on their way to the square suddenly seemed boring and grey. None of them fighting for attention anymore. They swiftly walk across the bridge.

«Look, the stop-sign is fixed now» Andrea says, pointing into thin air.

«Yes, that's nice» Liv tags along. As they come closer to Samfundet all of the decoration has vanished, and Liv can see that the big round house isn't brilliantly red and cheerful anymore. The paint is faded, and one of the letters saying *Studentersamfundet* is missing. The house looks a lot like it did on the pictures she had gotten from her grandmother, from when she was a student at NTNU, minus the decay. On last bit of their trip Liv and Andrea passes several flowerless gardens before reaching their house. The minute they step in the house Andrea runs toward the sofa, which in reality looks dull and grey without its luminous effect.

«Can I watch the rest of the virtucast now, mom, can I pleeeas?» she begs.

«Yes of course» Liv replies. She watches her daughter in aw, as she sits there in the couch laughing at the seemingly empty wall, it is like they are in two completely different places.

Anders felt his heart beating fast as he stepped up on the podium. He gathered his notes in a firm grip, and looked at the crowd. There must have been hundreds in the hall. All waiting to hear revolutionising news from the tech world. As he moved towards the centre of the stage, silence and anticipation spread like wildfire across the audience. The only sound came from the flashes from dozens of cameras carefully situated in front of the stage.

«Welcome, and thank you. What I am about to reveal here tonight will change our lives forever.»