



3 years after a life-altering heart transplant, she's getting her Ph.D. from Carnegie Mellon

Lynnette Ng relearned how to breathe and walk as she also studied social media bots



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Lynnette Ng enrolled in a doctoral program at Carnegie Mellon University with plans to study social media bots.

She didn't expect to have to relearn how to breathe and walk along the way.

But that's where Ng's CMU journey took her after her lifelong struggle with cardiomyopathy came to a head in 2023. Ng required a heart transplant, an intensive procedure that is followed by a months-long recovery process.

It was difficult and life-altering. But a shining light through it all was the very research that brought Ng to CMU. She would spend hours in her

hospital bed typing research paper after research paper as her body healed.

Ng, 32, has made a full recovery from the transplant. She will graduate on Sunday with her Ph.D. in societal computing.

“[My research] gave me a purpose to keep going,” Ng said. “Knowing that my lifespan might be shorter than most people ... I worked really hard to live a legacy. I’d think, ‘What would people remember me by if I’m not here?’ That was the impetus for why I kept putting out papers.”

The Singapore native published more than 40 research papers during her time at CMU and won four academic best awards.

She also found the time to write a book — titled "Bots, Bias and Influence: The Hidden Architects of Social Media" — that will be published by Cambridge Publishing Press later this year.

Ng was born with cardiomyopathy, a disease that enlarges the heart muscle and subsequently causes the body to use more energy to pump blood. She had a pacemaker, but her body stopped responding to it amid her Ph.D. work.

In summer 2023, doctors at UPMC Presbyterian performed a lifesaving heart transplant on Ng. She awoke from the surgery tired and sore — and with the need to relearn how to walk and breathe without assistance.

It took a day for Ng to learn how to breathe again. Her husband, Adrian Lim, sat by her hospital bed, instructing her to breathe in and breathe out, until it again became second nature.

Relearning how to walk meant taking literal “baby steps.” She had to first relearn how to sit up and stand before she began taking a few steps each day.

It was the promise of the hospital Starbucks that motivated Ng to take her first big walk two weeks after the surgery.

“For me, [relearning how to walk] was fast because of the Starbucks,” Ng said, laughing. “I was so deprived.”

The full recovery process spanned upward of six months and included a bout with pneumonia stemming from Ng’s weakened immune system post-

transplant.

She took a semester off classes, but continued writing research papers. She credits her research for physically improving her health in the aftermath of the transplant.

“My brain was the organ that was working the best at that point,” she said. “I still had so much I wanted to tell the world. I just kept writing.”

Ng’s research passion is for social media bots: automated software programs that manage social media accounts, mimicking human behavior by posting, reposting and liking posts.

A benevolent example of a bot is [PepitoTheCat](#), an X account created by a French cat owner to automatically post a photo every time his cat, Pepito, enters or exits his home. But bots [can also be used](#) to steal content and data, manipulate public information and skew online perceptions.

Ng spent hours researching how bots affect humans. She also looked at the best ways to detect “bad bots” to clean up the online ecosystem — and studied how people can create “good bots” to aid humans.

The transition back to classes was smoother than Ng thought it would be. She said her professors, adviser and fellow doctoral students were “very understanding” of her health, including her weakened immune system.

Throughout the entire experience, Ng said she discovered firsthand how supportive the CMU community is.

“I did not expect both my Ph.D. and my transplant situation to be so well-received. I thought that I was just going to disappear from school for a year. But a whole bunch of people helped out during the transplant and after, wherever they could,” she said. “When I got sick again [with] pneumonia, there were people that were literally waiting for me to come home.

“There is a community for us at CMU, and it’s a really supportive community beyond what I actually had imagined.”

Also during her Ph.D. journey, Ng found the time to mentor several undergraduate students.

She and her husband have also acted as unofficial ambassadors to the city

of Pittsburgh through Ng's Instagram account, [littlebabypenguin](#), that documents Ng and Lim's adventures in Pittsburgh through the eyes of two penguin stuffed animals.

With more than 3,000 followers, the account has gained quite a following at CMU. Many CMU students who aren't from Western Pennsylvania have the misconception that there isn't much to do in Pittsburgh, Ng said. Ng and Lim's touristy recommendations — as well as Ng's recovery story — drew students in.

Ng and Lim themselves weren't sure about Pittsburgh or its weather when Ng began her doctorate five years ago. They stepped off a plane at the Pittsburgh airport to February snow.

The pair has since grown to love the city and its wintry weather. Ng even learned how to ski.

It's been meaningful for Lim to watch his wife overcome adversity. It's also been special to fall in love with Pittsburgh alongside her.

"She has grown a lot," said Lim, who met Ng during undergrad in Singapore.

Looking to her future, Ng would like to one day teach at the college level. She wants to continue doing research, and enjoys mentoring others.

CMU's graduation ceremony is Sunday morning in Gesling Stadium. Billionaire and Nvidia co-founder [Jensen Huang](#) will deliver the commencement address.

Ng sees her post-commencement life as the start of a new journey. At CMU, she learned how to be confident in her ability and ideas — and that's something she'll take with her moving forward.

"It has been a very transformative process," she said.

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