



What makes the perfect selfie? University of Waterloo researchers find out

News Aug 02, 2017 by [Samantha Beattie](/waterloo-on-author/samantha-beattie/1c9da6a9-837a-42a8-81e1-0b187cfeb512/) (<mailto:sambeattie@waterloochronicle.ca>)  Waterloo Chronicle



University of Waterloo computer scientists set out to answer the question, what makes the perfect selfie? By creating a data set and algorithm, they developed an app that assists users in capturing an ideal self-portrait. - Submitted photo

Your grandma might suck at taking selfies — that doesn't mean you should too.

University of Waterloo researchers agree, and have made it easier than ever to take the perfect solo shot for social media.

Computer science professor Dan Vogel and former master's student Qifan Li developed an app that directs the user where to position the camera for the most visually appealing selfie.

"Selfies are all around us; we see our friends on social media take selfies," said Vogel. "Not all selfies are equal — lighting is poor, or the face is off centred."

Looking through not-so-good selfies on Vogel's own Facebook feed motivated him to figure out what makes these photos attractive or unattractive to online audiences.

"There's nothing wrong with improving the visual esthetics of our world," he said. "Much like we already do with our homes and what we're wearing."

The researchers bought 3D digital scans of what are considered "average" looking people. They then took thousands of virtual selfies by writing code to control a virtual smartphone camera and computer-generated lighting. Using these tools, they explored composition, lighting direction, face position and face size.

Then, thousands of people, through a crowdsourcing service, voted on which of the virtual selfies they thought were best. Vogel and Li used math to model voting patterns, developing an algorithm and app prototype to guide people to take perfect selfies.

To test the algorithm, they had real people take selfies with their smartphone cameras and with the app. Based on online ratings, they found a 26 improvement in selfies taken with the app.

So, what makes a perfect selfie?

Before you get too excited, the end result is, in Vogel's words, unremarkable.

"Don't make you your face too close or far away to the camera, make sure lighting fills your face and centre your head in the top end of the frame," he said.

What's more important is that the researchers demonstrated how a subjective concept can be measured, turned into a highly controlled data set, and crunched into an algorithm.

"This is just the beginning of what is possible," Vogel said, adding the variables can be expanded to consider what makes the best selfie hairstyle, background, smile type, outfit or head tilt. The concept could be applied to other types of photos, like group shots, and esthetics.

The app prototype is unique in that it directs the selfie-taker where to position the camera, instead of doing it automatically for them after the photo is taken. In this way, the user actually learns how to make their photos better.

Researchers aren't planning to commercialize the app — a time-consuming and costly process.

"The app is a proof-of-concept," Vogel said. "Getting it ready for public release goes beyond our main mission."

by [Samantha Beattie](#) (</waterloo-on-author/samantha-beattie>

[1c9da6a9-837a-42a8-81e1-0b187cf512/](/1c9da6a9-837a-42a8-81e1-0b187cf512/))

Samantha Beattie is a reporter with the Waterloo Chronicle. She can be reached at sambeattie@waterloochronicle.ca (<mailto:sambeattie@waterloochronicle.ca>). Follow her on [Twitter](https://twitter.com/samantha_kb) (https://twitter.com/samantha_kb)

eMail: sambeattie@waterloochronicle.ca (<mailto:sambeattie@waterloochronicle.ca>)

[Twitter](https://twitter.com/samantha_kb) (https://twitter.com/samantha_kb)