Final count declares Anita Malik victor in Arizona Democratic primary

India's Supreme Court strikes down colonial-era ban on gay sex

In 'Searching,' Aneesh Chaganty brings the mystery genre online

India Abroad

A Weekly Window Into the Indian-American World

An 8K Miles Media Group, Inc. Publication Vol. XLVII, No. 50 New York, September 14, 2018 www.indiaabroad.com Periodical $1

Marathon Swimmer

Teen Angel More completes swim across Lake Tahoe in California

U.S.-India relations

Skeptical, But Moving Forward

Challenging Sessions

Vanita Gupta takes on DOJ on Harvard diversity lawsuit

A Podcaster For The Post

Veteran journalist Madhulika Sikka to create flagship podcast at Washington Post

Author of 'Taming the Sun' Varun Sivaram says solar is in his DNA

The Man Who Would Tame the Sun

Energy expert Varun Sivaram, an adjunct professor at Georgetown University, School of Foreign Service, at his book launch at the Emirates Center for Strategic Studies and Research in Abu Dhabi, May 9. The book tour took Sivaram other cities, including New Delhi, Oxford, Amsterdam and Mexico City.

Photo Courtesy: ECSSR

The Man Who Would Tame The Sun

Energy expert Varun Sivaram says Trump's tariffs on Chinese-made solar panels could backfire on U.S. market

By Suman Guha Mozumder

When President Donald Trump announced earlier this year that he would impose high tariffs on solar panels manufactured in China as part of his "America First" trade protectionism, solar energy expert Varun Sivaram said he believed the action would do little to protect the U.S. from Chinese domination in the solar market.

Sivaram, who has been ranked by kWh Analytics as one of the top five global thought leaders on solar energy, also did not believe that the measure would help create more solar industry jobs, as Trump claimed.

In fact, Sivaram has since warned that Trump's trade protectionism was likely to be counter productive.

"This imposition of tariffs is not going to help America create more jobs or to compete effectively against China which has captured the bulk of the international solar energy market today," he told India Abroad. "Rather than imposing tariffs, America can become more competitive by instead increasing research, development, and demonstration of innovative solar energy technologies."

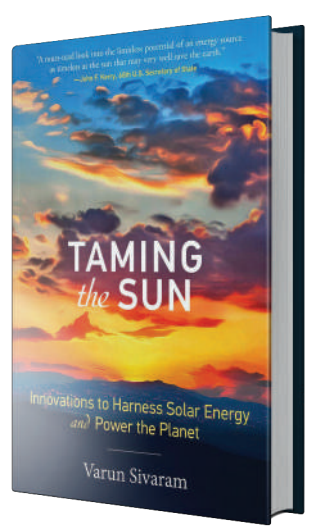
This is where Sivaram, Philip D. Reed Fellow for science and technology at the Council on Foreign Relations, takes issue with Trump.

"Some Trump administration officials strongly support solar innovation," he said. "For example, Energy Undersecretary Mark Menezes publicly endorsed my book for its discussion of advanced perovskite solar technology, an alternative to traditional silicon solar panels, but the broader thrust of the Trump administration's policies has not been to encourage innovation or renewable energy."

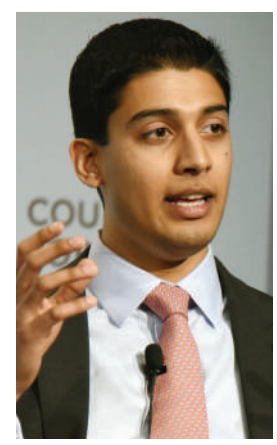
Sivaram is author of "Taming the Sun: Innovations to Harness Solar Energy and Power the Planet," published earlier this year. The author is also an adjunct professor at Georgetown University, School of Foreign Service, senior research scholar at the Columbia University Center for Global Energy Policy, and a board member for the Stanford University Woods Institute for the Environment and Precourt Institute for Energy.

"Overall, I am disillusioned by the Trump administration's lack of support for renewable energy," Sivaram said.

> Scholar says trade protectionism won't generate jobs but tech research could energize production in $28 billion industry



Since his announcement of anti-dumping duties, Trump's move has come under widespread criticism from both solar and free trade advocates. In March, the Solar Energy Industries Association said in a statement that Trump and Congress should reconsider support for tariffs and adopt pro-American policies that protect American jobs.



"The actual number of jobs added because of solar tariffs will be negligible under the best of circumstances, while the number of jobs likely to be lost because of these tariffs is 23, 000," the national nonprofit trade association said.

The $28 billion U.S. solar industry relies on solar panel imports for 80 percent of its supply. The sector employs 260,000 people.

It said that the "economy-damaging effects of tariffs" are both regrettable and avoidable and urged Congress to act to correct what it said will be a very bad deal for American workers.

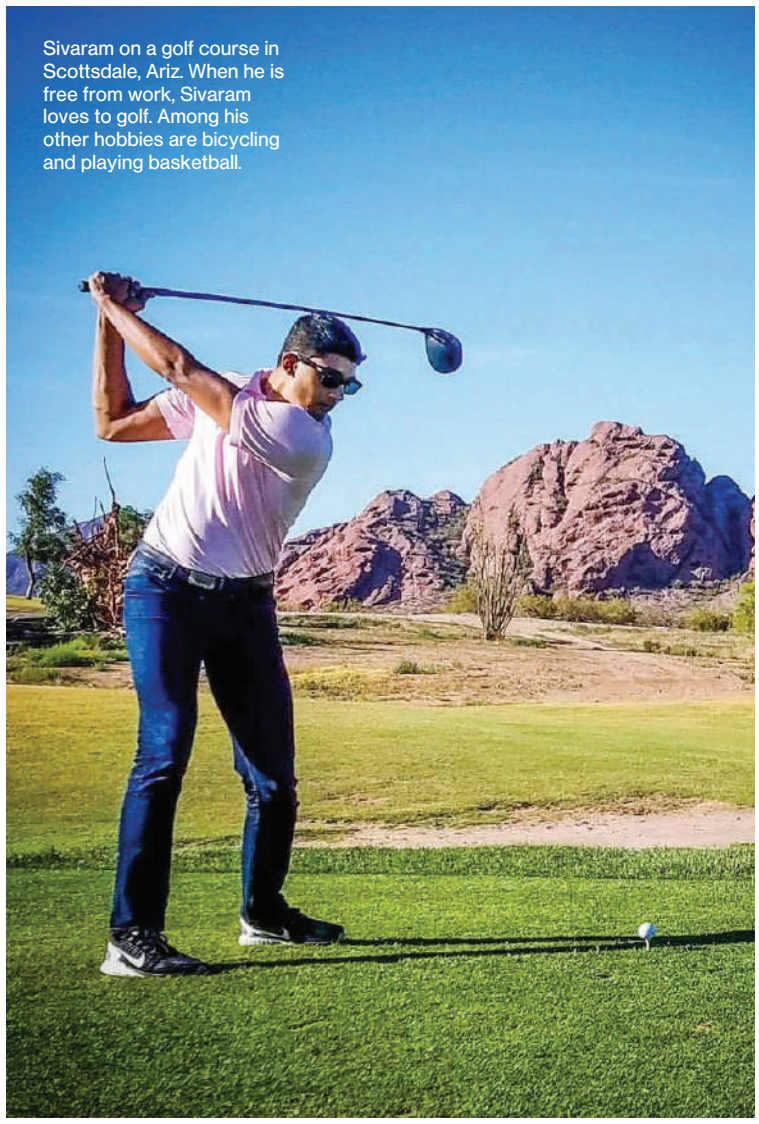
"You're going to have people getting jobs again and we're going to make our own product again. It's been a long time," Trump was quoted as saying in news reports in January as he signed the tariff imposition order.

In a Jan. 24 editorial in the New York Times, Sivaram argued that by raising prices, tariffs could shave American demand for panels by more than 10 percent during the next five years which would not only cost solar panel installer jobs, the fastest-growing job category in the U.S., but also set back progress on reducing carbon emissions.

In a February blogpost, the Brookings Institution said that the tariff will not likely lead to a dramatic boost to domestic cell and module manufacturing, for several reasons, including the "competitiveness gap" between the most well-positioned players — Chinese manufacturers — and U.S. manufacturers seems too

Continued on page 18

The Man Who Would Tame The Sun



Sivaram on a golf course in Scottsdale, Ariz. When he is free from work, Sivaram loves to golf. Among his other hobbies are bicycling and playing basketball.

Continued from page 17

significant to be closed via the new tariff.

It also noted that the average solar module price in China was 0.43 cents per watt in 2016, while it was 0.61 cents per watt in California, which was one of the highest averages among major markets and thus despite its other flaws, the new tariff may simply be too low to drive existing U.S. manufacturers to greatly expand their capacity and thus to protect jobs.

Emphasizing the urgent need for new research and technology development, Sivaram told India Abroad that the Trump administration has only proposed budgets that would cut funding for renewable energy innovation, and it has rolled back major Obama administration climate policies such as Clean Power Plan which would have supported renewable energy.

"I think there is an opportunity for bipartisan compromise on innovation. Research and development is a priority in which I think Republicans and Democrats could agree that it is a good idea to invest," he said.

At his book release at CFR in March, Sivaram told president Richard Haass that he does not see new factories or new jobs resulting from the tariff. "I see job destruction and I actually see a destruction of innovation. So, as it so happens this will cut jobs, not resuscitate manufacturing, and hurt innovation. I can't think of a worse policy."

> 'You're going to have people getting jobs again and we're going to make our own product again. It's been a long time'

Sivaram said in the interview that in order for innovation to accelerate, it is important for the administration to have a policy that is generally welcoming of immigrants, especially those who are highly skilled.

"I think we need a fundamentally reformed immigration policy in the United States that allows free flow of highly-skilled technology workers from abroad, including India. If we can encourage far more highly-skilled and highly capable people to come to this country and settle in and do cutting-edge research, then the U.S. economy will become far more innovative," he said. "immigrants are what makes the U.S. economy tick," he said. According to a Brookings report last year, 43 percent of companies in the 2017 Fortune 500 were founded or co-founded by an immigrant or the child of an immigrant.

Sivaram and other experts have pointed out that tariffs imposed earlier on countries like China and Taiwan did not really save U.S. solar cell and module manufacturing from international market pressures and so Trump's argument that new tariffs would help spur job growth does not seem tenable.

Sivaram said in the interview that in 2012, following allegations that the Chinese government was subsidizing local manufacturers of solar panels and cells and dumping below-cost solar panels on global markets over the prior five years and driving U.S. manufacturers out of business, the Obama administration, imposed tariffs on solar imports from China.

But, he said, it was too late. By that time China had managed to capture the international market with traditional silicon solar panels produced with technology first developed in the United States, where in 1954 Bell Laboratories invented the Silicon solar cell.

The U.S. maintained its lead in solar technology and the use of solar power until the late 1970s. "We gave up that lead in the 1980s under the presidency of Ronald Reagan when Japan first took over from the U.S. Then Japan was overtaken by Germany, and finally China has achieved dominance today," Sivaram said.

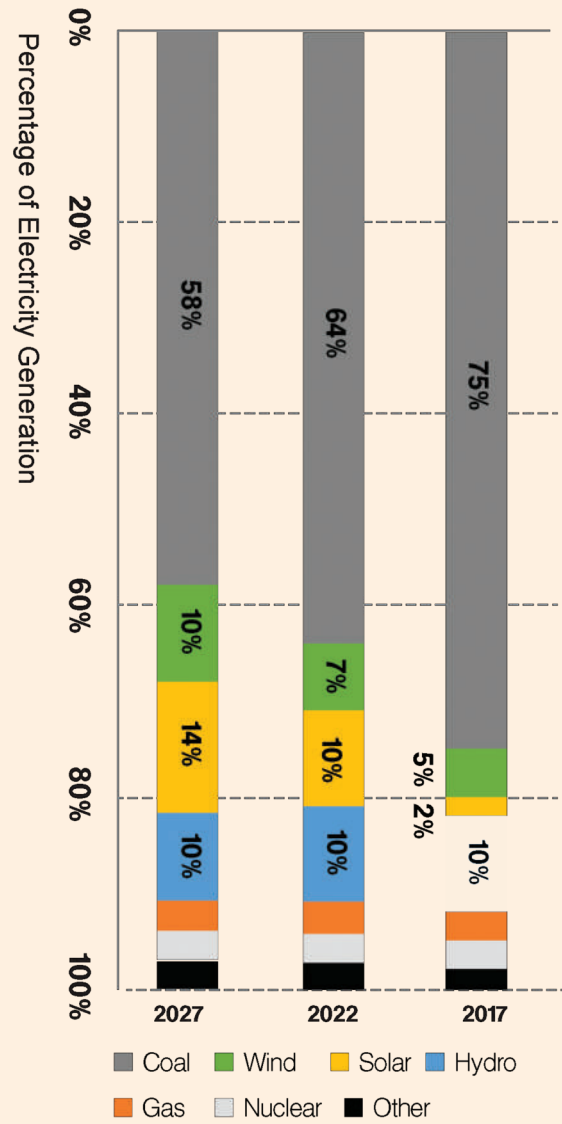
To a question as to why the U.S. lost its leading position, Sivaram said it happened because public funding for solar innovation and incentives to deploy solar power were slashed beginning in the 1980s.

"A secondary solar renaissance appeared to start in 2006 when innovative Silicon Valley start-ups sought to commercialize advanced technologies in the United States, but by 2012 they had been quashed by China, whose firms had started manufacturing silicon solar panels at a massive scale, helped by government subsidies," Sivaram said.

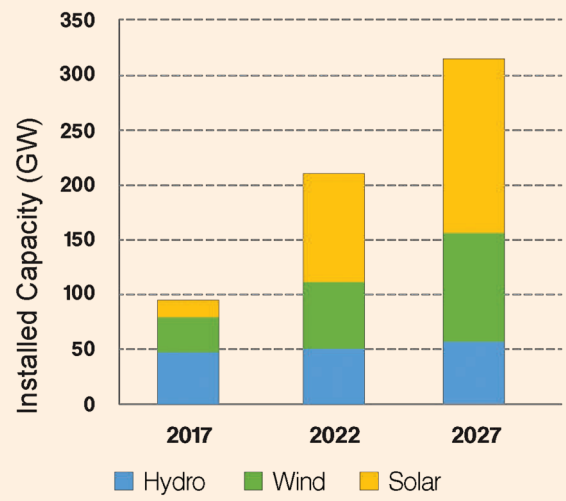
"By the time the Obama administration sprang into action, China has emerged as the global dominant player in the solar power market, and today it accounts for over two-thirds of the global production of solar panels, while the rest of the

Continued on page 19

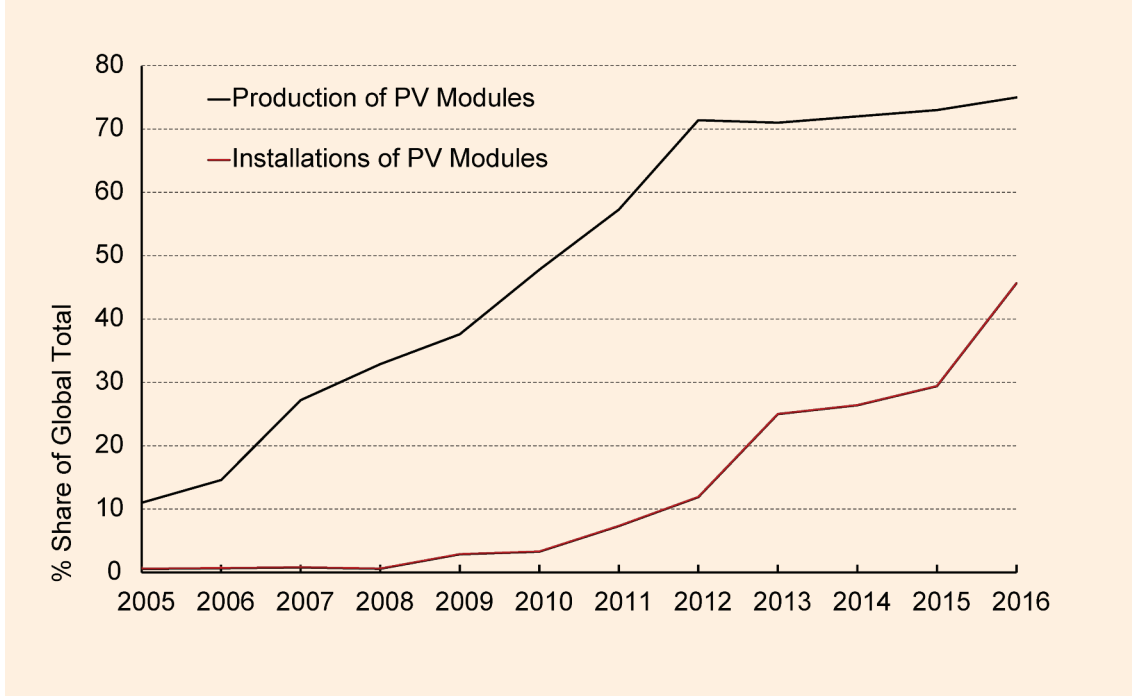
India is rapidly installed renewable energy, but **coal** will remain dominant for the next decade and beyond



India's renewable energy future in 2022 and 2027, if the government meets its ambitious targets.



Courtesy: Varun Sivaram



Courtesy: Varun Sivaram from "Taming the Sun"

Left, Sivaram, left, with his parents Ranjana Sivaram and "Siva" Sivaram and sisters Uttara and Saya, at his home in Monte Sereno, Calif. Sivaram says he is strongly influenced by family and takes inspiration from his father, a semiconductor scientist. Right, Chinese share of solar PV production and deployment. Comparison of China's rising domestic share of global PV panel (also called modules) production. Production quantities are measured in gigawatts of power-generating capacity with its more recently rising domestic share of global solar PV installations (also measured in gigawatts of power-generating capacity). Chinese production statistics include Taiwanese production as Chinese firms have shifted substantial manufacturing activities off the mainland to avoid U.S. and E.U. anti-dumping tariffs.

The Man Who Would Tame The Sun

Continued from page 18

world tries desperately to keep up," Sivaram said.

Experts differ on how China managed to get a market lead relegating Europe and even the U.S.to the background. A Forbes article on the subject said China's superior position was not just because of the alleged dumping but also years of "proactive government policy in renewables" that helped the country meet its 2020 solar power targets three years early, leaving it free to export the excess production.

Sivaram said for the United States to get on track to become a solar power the country has no option but to push for cutting-edge research and development technology. He said technology for making solar cells using perovskite, a hybrid organic/inorganic material that can enable lightweight, flexible, cheap, and highly-efficient solar coatings, is very exciting and can help demonstrate leadership in solar going forward. "At this point, the United States is not going to become a solar panel manufacturing super power with traditional silicon technology because that game is already lost to China," he said.

Meet the 'Hamilton of the Solar Industry'

Varun Sivaram has the energy to pursue advances in solar and his ideas shine through

By Suman Guha Mozumder

Varun Sivaram's youthful face, complete with an earnest grin, greets visitors to one page of the website of the Council on Foreign Relations, where he is the Philip D. Reed Fellow for Science and Technology. Off screen, however, Sivaram's gaze is more likely to be upward toward the sun — and even past it, sizing up new ways to tap its energy. Not yet 30, Sivaram has been sun-gazing for nearly half his life.

The webpage posted on the Council's site on May 14 of this year is devoted to his new book "Taming the Sun" in which the young scientist foresees a dimming future for harnessing solar energy without an influx of innovation to propel its technologies forward.

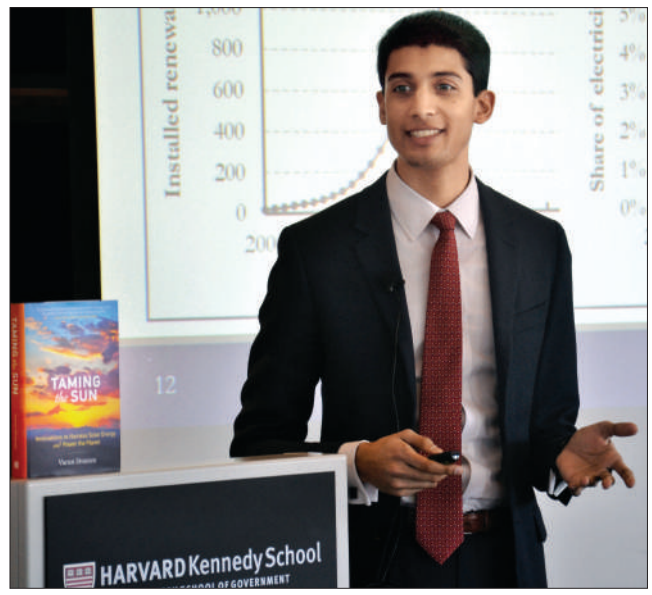
Researchers and policy-makers alike are reading the well-received book and people are listening to what he has to say.

Of course, that's nothing new: At Georgetown University, near his Washington, D.C. residence, he teaches students about the technologies of clean energy.

His instruction, however, is not limited to the classroom: Sivaram has counseled New York State Gov. Andrew M. Cuomo and Los Angeles Mayor Antonio R. Villaraigosa on energy and policy issues in their respective jurisdictions. He has been a consultant in Cleantech Practice at McKinsey & Company in San Francisco, dispensing advice to Fortune 500 companies on energy issues and how to stay competitive.In 2017, he was named by Forbes as one of the magazine's 30 under 30 in Law and Policy. That same year, Grist, a non-profit environmental online news magazine, named him as one of the top 50 leaders in sustainability, describing him as physicist who "shapes energy policy."

In an interview published in August 2017, PV Magazine USA, a leading solar industry magazine, proclaimed him "The Hamilton of the Solar Industry," comparing him to Revolutionary Era American statesman Alexander Hamilton, the big-thinker and architect of a nascent nation's Federalist Papers.

Sivaram has had one eye trained on the sun since he was a freshly minted Saratoga High School graduate — and valedictorian of his class — in 2007. Shortly before immersing himself in engineering physics and international relations at Stanford University, he took a job with a Nanosolar, a solar panel manufacturer, assembling silicon solar panels. The company's offer to promote him to full-time engineer nearly sidelined his enrollment at Stanford. At Stanford he won the Boothe Prize for expository and argumentative writing in his first year, and an Edwin Cottrell Prize for his political science studies.



Sivaram at Harvard Kennedy School for his book release.

He was admitted to the engineering honors society Tau Beta Pi and, in one of his decidedly unscientific pursuits, became captain of Bhangra, the school's Indian dance team. While at Stanford he did engineering research in Germany as well as at the school's Synchrotron Radiation Laboratory and had two solar-energy design patents pending.

In 2011, he went on to Oxford University as a Rhodes Scholar, researching how materials like perovskite could lead to superior solar panels.

He received his PhD in condensed matter physics from St. John's College at Oxford where his efforts included the development of third-generation solar photovoltaic coatings.

Solar energy, he said, is in his DNA. His father Siva Sivaram, a native of Tamil Nadu, founded California-based Twin Creeks Technologies in 2008, a startup to produce equipment that would reduce solar panels' cost.

"I am strongly influenced by family," Sivaram said in an interview, noting that he has taken inspiration from his father, a semiconductor scientist who is now the executive vice president of Western Digital.

Sivaram himself is a native of California. His mother Ranjana Sivaram is from Karnataka — and he has two younger sisters, Saya and Uttara. The physicist finds his inspiration from the earthly world around him too, especially in the realm of technology. In April 2016, he publicly thanked Microsoft's Bill Gates with a tweet acknowledging him as a force behind "The Clean Energy Revolution," a piece Sivaram had coauthored with energy expert Teryn Norris in the publication Foreign Affairs. Sivaram had been impressed with Gates' presentation on the Breakthrough Energy Coalition on the sidelines of the UN Climate Change Conference in Paris in December 2015.

As a proponent of technological innovation, Sivaram found that the clean energy technology concepts touched his imagination too.

Continued on page 34

John Cho and Debra Messing in a scene from "Searching." Directed by California native Aneesh Chaganty, the film tells the story about a father's efforts to find his missing daughter with the help of a police detective and clues left behind on his daughter's internet history. Bottom, Cho as David Kim, in a scene from the film.

NEW RELEASE

Filmmaker Aneesh Chaganty 'Searching' for Connections

In movie of same title, California native unfurls a thriller told wholly on devices' screens

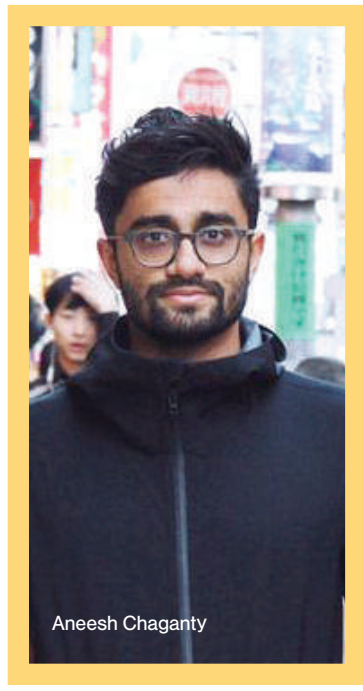
By Bhargavi Kulkarni

There was a time when Aneesh Chaganty wondered if his first feature film "Searching" would ever see the light of the day. He worked on it for three years with his team, and "we didn't really know if it would even get released," Chaganty said. However, Chaganty did finally make the feature film: It made its debut at Sundance and released in theaters worldwide Aug. 24.

Made on a shoestring budget with Korean star John Cho in the lead, the film has already established Chaganty, 27, as a filmmaker to reckon with. Co-written by Chaganty and Sev Ohanian and directed by Chaganty, "Searching" is a thriller about David Kim's (John Cho) efforts to find his missing daughter Margot (Michelle La) with the help of a decorated police detective (Debra Messing) and clues left behind on his daughter's internet history. The film unfolds entirely on a variety of different screens, from those of computers and CCTV cameras to mobile phones, televisions and hidden cameras.

But "Searching" was not meant to be a feature film. The California native had pitched it to studios as an eight-minute short film. The producers suggested Chaganty turn it into a full-length feature film. However, Chaganty initially declined the offer, arguing that he didn't want to stretch a good idea beyond a point, but then decided to give it a shot. He put to use the skills he learned at his first job: Chaganty worked for a couple of years at Google before gravitating to full-time filmmaking. Chaganty said he had another reason for making the film: debunking the negative portrayal of technology in Hollywood's movies. Chaganty said he wanted to show that "although technology can alienate...it can also connect. It can make us hope, it can make us love." In an interview with the Press Trust of India, Chaganty said the creative team initially toyed with the idea of making Cho's character a software engineer. Then they began focusing on small actions done on a computer and the reasons for each of them: closing a window, initiating a forgotten password request, deleting a file.

> Bollywood, Hollywood and Telugu features helped him embrace craft at a young age



Aneesh Chaganty

"We picked up cold interfaces and utilized them in an emotional context," he said.

Although Chaganty was exposed to technology as a teenager, he was introduced to the movies by his mother. "My mom grew up in a culture that worshipped movies — spectacles, romances, epics, dramas — and she passed that on to everyone in the house," he told NBC. He recalled her pulling him and his brother from middle school on a Friday for a movie that was just released. "Naturally, I fell in love with movies as an experience well before I fell in love with movies as a craft, and that — I hope — really informs the way I tell stories today," he said.

Chaganty, who grew up on a dose of Bollywood, Telugu movies and Hollywood also credits M. Night Shyamalan among his many influences. He was first noticed in 2014 with the ambitious short film "Seeds." The video, shot entirely on Google Glass without any dialogue, chronicles one man's journey to deliver an envelope containing life-changing news across the globe.

"Seeds" went viral within hours of going online and led to an invitation for Chaganty to join the Google Five, a team of young creatives based in New York City out of the Google Creative Lab. There, he wrote and directed commercials rooted in emotional narratives while highlighting how Google products can improve daily life.

That is where the idea for "Searching" was born. Prior to "Seeds" Chaganty had made "Nug," a five-minute short film which tells the story of a gun in reverse. He was in high school at the time — and "Nug," won the high school film festival's award for Best Short Film.

Chaganty is already working on his next film "Run." The thriller is an ode to Shyamalan, he told NBC. Although the plot about a parent and a child is similar to "Searching," the film doesn't take place on a computer screen. "I don't want to be put in a box for a concept like that... so that's the last time I do that."

Meet the 'Hamilton of the Solar Industry'

Continued from page 19

His latest passion, he said in an interview, is learning Hindi "especially spoken Hindi. I try and speak Hindi these days with whoever I can before I take up my next job."

The time for that next job is now: Sivaram is headed for India in September where he will work as CTO of ReNew Power, a multibillion-dollar firm that is India's largest renewable energy company, with nearly 6 gigawatts of power generation assets, mostly large-scale wind and solar farms.

"I'm excited to join them and build leadership in clean energy technology -- from increasing the efficiency of solar panels to boosting the performance and uptime of wind farms, using data science and artificial intelligence," he said in an interview.

Speaking this past April to E&E News, an energy industry magazine, Sivaram was asked what he would like to achieve by age 50. He answered that he hoped to have reinvented himself two more times. "The next thing I think I'm going to do is become a data guy. I'm going to become a data scientist," he said.

"Beyond that, I do want to do one more reinvention cycle. By age 50, I really would love to contribute meaningfully to one of the global challenges I'm really worried about. Climate change is the one I've been working on so far."