[**Cue CSElogo with Evening news under it… network news theme]**

**Stefan**: Friday December 7th, 2018. This is the CSE News Network with Julian McAuley.

**Julian**: Good evening, I’m Julian McAuley, standing in – now and forever – for Hovav Shacham. in today’s top story, a bizarre offshoot of the QAnon conspiracy cult -- CSEAnon – has been making its presence felt across the San Diego region. *[****Put of slide of CSEAnon****].*

**Julian**: Led by ringleader Arian Mirian, [**Put up slide of We Are CSE**] the group’s motto is “We are CSE, Nobody Speak, Nobody Get Owned”. Indeed, the phrase “We are CSE” is now widely understood to be dog-whistle for covertly signaling affiliation with the group. CSEAnon’s positions are many and hard to pin down, [**Put up slide of Belief System]** but among them they hold that today’s faculty are in fact descended from an ancient Masonic order that subsists by consuming the tears of grad students. Further, they claim that the very act of research is a ruse, whose true purpose is to subject students to experiences designed to amplify their latent feelings of inadequacy and thus harvest a steady supply of student despair with each new paper rejection.

**Julian**: Mirian and her cult have been recruiting members [**Put of slide of Ariana and animate**] from across the University of California at San Diego. Campus officials advise us that they should be considered armed with dangerous ideas and not to approach.

**Julian**: In other news, the UCSD administration is embroiled in controversy as a byproduct of the University’s new Data Science Institute. [**Put up HDSI slide**] Many departments, including Computer Science and Math, fear that HDSI’s degree program and faculty hiring will compete with their existing efforts for campus resources. To address this issue [**Put up Code Science slide**], the Department of Computer Science and Engineering has tried to distinguish itself by introducing a new program in Code Science.

**Julian**: Says CSE Chair Dean Tullsen, [**Put up Dean Tweet**] “‘hello world’ is not the real world. A modern operating system now has over 50 million lines of code. Google has over two billion lines of code in production. Managing “big code” is a science in its own right and we plan to train the “code scientists” needed for tomorrow’s mega projects. In response, the Division of Physical Sciences is has renamed itself the Division of Science Science [**Put up science science slide**] and offers students a science-based approach to using the scientific method in pursuit of sciences such as Physics Science and Chemistry Science. A dark horse in this race, the San Diego Supercomputer Center has rejected this approach instead is actively lobbying to offer a degree in “Data Data” [**Put up data data slide**]. Finally, in related news, the Scripps Institute for Oceanography is also seeking to get in on the land rush with its new “Marine Learning” program. [**Put up marine learning slide**] Indeed, Margaret Leinen, Director of SIO, recently announced that with the acquisition of several new submersibles, that the institute was planning to compete in the new “Deep Marine Learning” field -- what is sometimes called “Big Wet Data”.

**Julian**: Finally, this is not the only fundraising activity here in the CSE Department. Joining us today to bring us up to speed on the latest activities is SE Chair Dean Tullsen.

[**Dean joins and sits down**]

**Julian**: Dean, thank you for joining us.

**Dean**: It’s my pleasure to be here Julian.

**Julian**: Dean, aside from the new “Code Science” initiative we mentioned earlier, what else is the department doing to raise money.

**Dean**: That’s a great question Julian. We’ve started a two new initiatives to tap into the latent demand for the services we provide. The first is our new granular degree program structure. This has been driven by the realization that while not everyone is ready for a rigorous multi-year education experience here at UCSD that doesn’t mean they don’t want access to computer science education. For example, earlier this year Sorin Lerner spearheaded the Department’s effort to offer a MicroMasters™ in Data Science, [**Put up Micromasters slide and animate through rest of this paragraph**] which is offered online via edX and consists of four courses taught by our faculty – bringing in $1260 per student. Based on the overwhelming response, we’re taking this idea to the next level. This next Spring, UCSD CSE will be the first to offer a NanoMasters™ program. For example, the NanoMasters™ in Data Structures, will consist of one course, Data Structures, offered on Reddit and taught by UCSD Grad students. Then, the following fall we’ll then roll out our first PicoMasters™ degree – the PicoMasters™ in Linked Lists – which will be offered via Twitter and taught by Internet trolls. We’re still working through the pedagogy on these efforts, but the economics are amazing.

**Julian**: That’s fascinating Dean. And what is the second initiative?

Dean: I’m really excited about this other idea. But I think its best if you hear from Deian Stefan who has taken the lead on this effort. Deian, come on out.

**Deian**: Thanks Dean. Computer science has long contributed to the underlying algorithms used in leading edge Financial Technology like Bitcoin and Ethereum [**put up Bitcoin slide**], but until now no one has figured out how to harness this new revolution in support of CS education. That is all about to change. Next week, UCSD will announce the world’s first Initial Class Offering (ICO), [**Put up ICO slide and animate**] which offers investors the opportunity to get in the ground floor of new decentralized education system. By utilizing Blockchain Technology, we will address a number of unsolved problems in administering high quality education. For example, cheating will become a thing of the past due to the distributed Proof-of-Homework agreement protocol. A variant on this idea is being used by the Theory faculty to automatically check homework as well, using a so-called, “Proof of Proof” approach. Finally, the department will be issuing its own cryptocurrency tokens, ChezBobCoin, which will use our own patented distributed Slack Shaming protocol to simultaneously reduce friction for retail transactions, while also creating opportunity for important and critical public social commentary about individual student deficiencies.

**Julian**: Deian and Dean, thank you very much for that update. (**Dean and Deian leave**)

**Julian**: Next, we reprise last year’s new segment, “Ask a Genius”, (**slide of genius**) in which we pose deep computer science questions to CSE’s resident MacAurthur winner, Stefan Savage. Professor Savage is joined by his close collaborator, Professor Geoff Voelker, who helps interpret his sage words down to a level that the rest of us would be able to understand. Stefan, Geoff, we welcome you to the show.

**(Geoff and Stefan sit down)**

**Geoff**: Thank you

**Julian**: Stefan, let’s start with a hot topic. Recently there has been enormous interest in the application of large datasets and computational resources to automated learning programs, so-called “Deep Learning”, which some say will provide the foundations for true Artificial Intelligence. However, others says these claims are overhyped and inherently limited in scope. How should we think about this question?

**Stefan**: Artificial Intelligence? Deep Learning? Ooooh….that’s really Deep. First, let me say that my body is a temple and so I don’t eat anything artificial. Only Organic. I don’t understand why more people don’t work on organic, free-range, intelligence. It may cost a bit more, but it’s good for the planet. Too much intelligence is being commercially raised in tiny little datacenters. I think it may be because of the learning deepness. Because what they don’t realize is that when you go deep you ruin the soil our intelligences are growing in. Our ancestors knew this… the best intelligence needs good fertilizer and fertilizer is on the surface. Ask anyone.

**Geoff**: What Stefan means is that there is an inherent philosophical dichotomy in the nature of intelligence. Since Turing’s test we’ve debated about the distinction between algorithms that “appear” intelligent and those that may actually reflect self-awareness and true cognition. Stefan feels that Deep Learning, while an important engineering advancement, faces that same challenges that Searle first proposed in the Chinese Room experiment and that the strong AI hypothesis can only be addressed by first understanding the basis for the exceptional basis for human consciousness and intellect.

**Julian**: Ok, our next question is a bit closer to your own field, computer security. Over the last year, the computer architecture community has been rocked by the discovery of multiple side-channels – Spectre and Meltdown -- in popular chips that exploit speculative execution to bypass architectural protections. What do you think is the best way forward on this problem?

**Stefan**: The best way forwards is to go backwards… but in reverse. It’s like y’know how the best offense… is a good defense… but one that hits people while its defending an’ all? Its like that. What is so trippy is that speculatation is the problem and the solution. If you speculatate then you could be wrong, but if you speculatate that you weren’t wrong, then you could be right. But remember… what if you just speculatate that you didn’t speculatate… because that’s a speculatation too? So its not that we don’t MeltDown, its like we Freeze Up, see what I’m saying?

**Geoff**: What Stefan is saying is that existing modes of speculative execution have proven vulnerable precisely because their non-architectural side-effects are not encapsulated within current computational models. In that, they are both speculative but also affirmative statements -- what he describes via his portmanteau “speculatation”. Stefan teaches us that the solution to this conundrum is not in avoiding speculation, but in pushing the paradigm to the next level. By speculating even further, one can then evaluate whether future accesses will obtain non-deterministic results, allowing a chip to effectively encapsulate such side channels from any instruction stream.

**Julian:** I don’t know how you got that explanation from what he said.

**Geoff**: Sometimes, like fire, true genius can only be appreciated long after it has burned us.

**Julian**: No doubt… ok, let’s try one final question. This one is from a member of the audience. They ask, “What is the best way to find parking on campus after 10am?”

**Stefan**: Parks? I like parks. I go to parks too. I like to go to parks a lot. You can see birdies there, and there are worms and grass and sometimes, after a storm, it smells like… like a storm just happened. Parking can be super cool. But I try not to find it unless its ready to be found. I don’t think the parks like you to be finding them after 10am. So the best way to find parking then is not to look, because it won’t find you.

**Voelker**: I don’t think I need to explain.

**Julian**: No, I don’t think you do. Well, thank you both for joining us today

**Geoff**: It was our pleasure.

**Stefan**: No parking.

 [**Geoff and Stefan leave**]

**Julia**: Well that’s all for tonight folks. To close us out tonight, we have the world premiere of the the hit new video from The Children of Lambda Style Productions.

[**play video**]

[**Put up final slide]**