1
00:00:02,330 --> 00:00:13,200
[Music: Chopin's Fantasie Impromptu]

2
00:00:13,200 --> 00:00:17,119
My name is Gabriel Apaza. I live in Northville, Michigan.

3
00:00:17,140 --> 00:00:24,020
I am currently attending Michigan State University getting a major in computer science and engineering,

4
00:00:24,040 --> 00:00:27,320
and I'm minoring in mathematics, and I'm a rising senior.

5
00:00:28,460 --> 00:00:34,920
My name is Philip Lu. I grew up in Hacienda Heights, California. And right now I'm actually going to UCLA

6
00:00:34,920 --> 00:00:36,480
for my Ph.D. in physics.

7
00:00:37,100 --> 00:00:41,580
APAZA: I've been playing classical piano probably since about the age of 6,

8
00:00:41,580 --> 00:00:45,020
and I've been taking lessons from a local piano teacher

9
00:00:45,020 --> 00:00:47,580
until I was about 16 years old.

10
00:00:48,240 --> 00:00:51,420
LU: I started learning piano when I was about 4,

11
00:00:51,500 --> 00:00:57,340
and I had a piano teacher until I was maybe 13 or so, but then

12
00:00:57,420 --> 00:01:02,780
I decided to just focus on my studies more, so I stopped taking lessons, but I've been playing ever since.

13
00:01:04,780 --> 00:01:08,860

APAZA: As a Goddard intern I'm working on a project called TAT-C,

14
00:01:08,860 --> 00:01:11,360
which stands for the Trade space Analysis Tool for

15
00:01:11,360 --> 00:01:15,520
Communications, and that's just an application that allows end-users to

16
00:01:15,870 --> 00:01:20,630
decide which space mission is best for what they want to accomplish. And my role

17
00:01:20,880 --> 00:01:23,689
personally on that project is, I'm a software architect.

18
00:01:23,790 --> 00:01:30,559
So I just use different design patterns to put together different pieces of software that makes the application

19
00:01:30,960 --> 00:01:33,080
easier to maintain and easier to use.

20
00:01:33,360 --> 00:01:39,590
The most exciting part about this project is actually seeing the project implemented into real life and

21
00:01:39,810 --> 00:01:42,650
Seeing real science being used with TAT-C.

22
00:01:45,080 --> 00:01:52,180
LU: My project is on microlensing. So microlensing is based on the principle that gravity bends light around it.

23
00:01:52,440 --> 00:01:57,340
So when you have a star or a planet moving in front of another star,

24
00:01:57,340 --> 00:02:03,100
it makes the star behind it brighter. And by just looking at how well it gets magnified we can infer

25
00:02:03,640 --> 00:02:08,040
characteristics of the planet or the star and it's really cool because we can

26
00:02:08,040 --> 00:02:14,640
maybe perhaps find Earth-like exoplanets, which are planets orbiting around other stars besides the Sun

27
00:02:14,720 --> 00:02:15,900
in our galaxy.

28
00:02:18,880 --> 00:02:23,780
APAZA: Whenever I'm working or coding, I always like to have music playing in the background,

29
00:02:23,780 --> 00:02:25,520
specifically classical music.

30
00:02:25,520 --> 00:02:32,020
I feel as if music that has set patterns in it that I can recognize really helps stimulate my subconscious,

31
00:02:32,080 --> 00:02:37,160
and it helps me find answers to problems that I wouldn't be able to solve otherwise.

32
00:02:37,160 --> 00:02:42,459
Each composer has their own different style and a pattern that's recognizable.

33
00:02:42,459 --> 00:02:45,039
Just like how in different branches of math they have

34
00:02:45,799 --> 00:02:52,299
different patterns that you can see. And I can always go to the piano to just play and kind of

35
00:02:52,640 --> 00:02:56,949
de-stress a little bit, and it definitely helps me solve problems.

36
00:02:58,579 --> 00:03:00,969
LU: Classical piano and mathematics both present

37
00:03:01,720 --> 00:03:09,060
similar types of problems. Both types of problems require a similar kind of problem-solving.

38
00:03:09,820 --> 00:03:16,780

And when you find that elegant solution it feels great whether or not it's mathematics or piano.

39
00:03:17,420 --> 00:03:22,449
It's also nice to have a second creative outlet, because when I'm stuck on a math problem,

40
00:03:22,449 --> 00:03:26,200
and I just, I just feel like I'm in a rut. I can just go and

41
00:03:26,400 --> 00:03:29,100
blow off some steam and play some piano and vice versa.

42
00:03:29,109 --> 00:03:36,429
I also like having music whenever I do some coding or some grading because it really just keeps me invigorate