WEBVTT

NOTE duration:"00:03:35.4260000"

NOTE language:en-us

NOTE Confidence: 0.924753785133362

00:00:04.300 --> 00:00:14.800 Interventional Oncology is a relatively new born field and what we do is essentially provide minimally invasive therapies of different cancers, most frequently liver, lung and kidney cancer.

NOTE Confidence: 0.92741072177887

00:00:15.450 --> 00:00:32.500 The advantage of these methods is that they have much less effect on the rest of the body and also they have lesser effect even on the surrounding organ - Liver cancer is in a way a very unique disease. It is one of the diseases that has been increasing in incidence rates as opposed to most other cancers.

NOTE Confidence: 0.899856090545654

00:00:33.440 --> 00:00:37.510 In cancer care all the decisions ultimately are being made in tumor boards.

NOTE Confidence: 0.931131958961487

00:00:38.200 --> 00:00:47.140 But this host of members who come together who can weigh in on what they feel is the most appropriate management for any particular patient.

NOTE Confidence: 0.917733550071716

00:00:47.890 --> 00:01:00.889 There's a lot of data that needs to be put into play in terms of making a recommendation how to manage a patient? - What are the blood work look like? - How healthy are they in terms of other medical conditions that they may have?

00:01:00.890 --> 00:01:07.030 - Published information that pops up in an incredible speed. - What does their image look like? - How many tumors? - Multiparametric imaging data?

00:01:07.238 --> 00:01:12.230 - How aggressive is a tumor look like? - Tumor markers. Genomic information. - The size of the tumor. - History.

NOTE Confidence: 0.89831817150116

00:01:18.380 --> 00:01:20.910 That can become quite complex.

NOTE Confidence: 0.926476299762726

00:01:26.840 --> 00:01:42.270 We identify a clinical problem where we are overwhelmed with a certain set of data and approach the Biomedical Engineers and say, Hey guys, you are much smarter than we are, how can we come up with

a solution? How can we come up with an algorithm that is going to help us through this chaos of data?

NOTE Confidence: 0.949983596801758

00:01:43.230 --> 00:02:07.430 We look to the clinicians to give us the appropriate clinical questions, then we try to develop algorithms. That would address those issues, we gathered data from them along with their expert annotations and background information and then it's an iterative process of testing. These algorithms evaluating how well they're performing and back and forth.

NOTE Confidence: 0.910069346427917

00:02:12.810 --> 00:02:29.070 Yale offers the ideal infrastructure with those experienced PhD level faculty, Biomedical Engineers, Computer Scientists who have been doing this work for the last 3 decades and us who now have on a clinical and big interests and really advancing that field and introducing it into a clinical practice.

NOTE Confidence: 0.950967311859131

00:02:29.850 --> 00:02:39.380 These algorithms detect patterns in clinical data that are then used for decision making with respect to treatments.

NOTE Confidence: 0.923648416996002

00:02:39.900 --> 00:02:48.830 In liver cancer imaging plays a very, very important role and this is where we need to really get better at extracting the imaging information in a quantitative way.

NOTE Confidence: 0.935378193855286

00:02:49.490 --> 00:02:58.660 It's an advanced tool that just like all the other tools in the physicians toolkit. This is another one, it's based on algorithms instead of a stethoscope.

NOTE Confidence: 0.905290007591248

00:03:03.880 --> 00:03:10.690 Humans aren't perfect and machines aren't going to be perfect either. But maybe putting the 2 together will achieve quite a level of perfection.

NOTE Confidence: 0.919989109039307

00:03:11.760 --> 00:03:23.380 I think that deep learning and deep learning based algorithms can help us device a decision support tool that will make the tumor boards more effective and actually make our clinical outcomes better for the patients.