conference.program

3.31.16

9am

Title	Presenter	Notes	
PDR 1 + 2	with Emily Zhang		
Understanding the Twin Paradox Through Relativity	Jessica Pointing	14	*
Minimax - How to Use Randomness to Make Decisions	Connor Sell	15	
What Makes a Rainbow?	Ethan DiNinno	14	
Quantum Mechanics: The Cool Thing To Do	Justin Xiao	14	
How to Win at Strategy Games	Kevin Wen	16	
Twenty Chimneys	with Professor Muriel Medard		
Reading Our Genes: Sequencing DNA	Bryce Hwang	2	*
Zoom vs Distance	Ivan-Tadeu Ferreira-Antunes-Fil	2	
Lies, Damned Lies, and Bayesian Probability	Benny Zhang	2	
Flashing Lights, Action Movies, and Opera Singers	Antoine Nasr	2	
The Hodgkin-Huxley Model and Making Friends	Anita Liu	2	
Mezzanine Lounge	with Francis Chen		
Netflix & Filtering: Recommender Problems	Sitara Persad	17	*
Animate Cloth and Hair Realistically	Jared Counts	17	
How Does Facebook Work?	Matthew Guthmiller	17	
How your password stays secret (when your computer is stolen!)	Max Justicz	14	
HOX Genes: How to Reverse Engineer a Dinosaur from a Chicken	Kamilla Tekiela	14	
Coffeehouse Lounge	with Alex Chumbley & Dr. Jason Miller		
The human ear & radio: what they have in common	Eric Fegan	11	*
Approximating Pi Using Toothpicks: The Buffon Needle Problem	Sarah Shader	11	
How Devices on the Internet Communicate: Finding Paths through a Complex Network	Francesca Cicileo	12	
How to Get to Space: Rockets, Engines, and Staging	Nicholas McCoy	13	
(no title)	Angel Carvajal	10	
PDR 4	with Virginia Chiu		
One Bit Two Bit, Red Bit Qubit: Understanding Quantum Computers	Matt Basile	12	*
Saving Time with Shortest Path Algorithms	Antonio Rivera	13	
Cashing Cache: A Computer's Short Term Memory	Emily Benz	13	
Public-Key Cryptography: Sending Secrets the Hard Way	Kevin Kusch	12	
Passing Messages Over the Internet	Asya Bergal	12	

10am

Title	Presenter	Notes	
PDR 1 + 2	with Professor Tim Lu		
How to kick your friends off the Internet: DDoS ins and outs	Everardo Rosales	3	*
Image processing - standing out against the background	Rebekah Cha	3	
How Not to Gamble	Or Oppenheimer	3	
How to work well with friends	Hongyi Shi	3	
(no title)	Alexander Stewart	3	
Twenty Chimneys	with Professor Muriel Medard		
How Light Enters the Brain	Amanda Liu	7	*
How Computers Talk	Emily Armstrong	7	
(no title)	Kevin Kwok	7	
(no title)	Kevin Li	7	
What is the fastest way to get around town?	Adrian Mora	7	
Mezzanine Lounge	with Francis Chen		
Why We Can't See Through Walls	Devin Morgan	7	*
Electric Motors: Turning Electricity into Motion	Aaron Rose	7	
Black Holes: A Better Chance of Escaping Alcatraz	Thomas Harris	17	
Making The Unknown Known	Kathleen Johnson	17	
Interrupts: Ways to Manage Different Hats	David Kang	17	
Coffeehouse Lounge	with Alex Chumbley		
Keeping Things In Control	Sara Sinback	1	*
Where am I?: Determining Your Location with Your Phone	Andrew Titus	3	
How Do Airplanes Fly?	Alice Zielinski	3	
Ordering Pizza and Reliable Communication	Sen Chang	11	
Fuzz Testing: Using Monkeys to Find Problems	Lynda Tang	11	
PDR 4	with Professor Sangeeta Bhatia		
Making Medicine Efficiently: How to Make Cells Do what You Want	Camilo Ruiz	1	*
Predicting the Future: Markov Chains	John Brown	1	
Light Switches and Cheat Codes: One Step at a Time	Timothy Higgins	1	
Be Proactive in Dating: The Mating Algorithm Says So	Eric Lau	1	
How to Turn Atoms into an Atomic Clock	Catherine Medlock	1	

11am

Title	Presenter	Notes	
PDR 1 + 2	with Professor Tim Lu		
Words as vectors: analogies for computers!	Hairuo Guo	4	*
How Drugs Work: What Goes on Inside the Brain	Jasmeet Arora	4	
Magnets, How do They Work?	Kevin Chan	4	
Can you see my heart beating? Understanding Electrocardiogram	Heejo Keum	4	
Cycle Detection: Am I walking in Circles?	Heeyoon Kim	4	
Twenty Chimneys	with Professor Muriel Medard		
Sharing is Caring: Torrents Demystified	Julia Guo	8	*
Turning the real world into 1's and 0's	Amelia Becker	8	
Principles of 2D Printing	Tucker Cheyne	8	
Tricking users into unintentionally displaying your website.	Will Haack	8	
How to make electricity with a copper tube and a magnet	Hau Lian	8	
Mezzanine Lounge	with Nick Uhlenhuth*		
How the Duck does Autocorrect Work?	Tilly Taylor	13	
Fitting More Music on your iPod Using Fourier Transforms	Stephanie Pavlick	8	
Not All Infinities Are Created Equal	Gerrod Voigt	16	
Hard problems are hard	José Velarde	16	
Coffeehouse Lounge	with Alex Chumbley		
Springy Thingies Turned Digital: Cloth Simulation in Computer Graphics	Emily Van Belleghem	4	*
How to Make a "Stupid" Proof	Cristina Mata	4	
Coding and Cooking	Phillip Ai	12	
Radio Jamming and how to Protect Against it	Alex Huang	11	
How Does the Internet Know You Are Human?	Roberto Soto	12	
PDR 4	with Professor Luís Velásquez-García		
Quantum Tunneling	Mahmoud Ghulman	10	*
Zero-Knowledge Proof: A Proof without The Real Proof	Laponchai Jirachuphun	10	
How to Hide Your Identity Online	Victor Lopez	16	
PID Controllers: boat steering and moon landing	Vahid Fazel-Rezai	15	
Bézier Curves: How a Simple Plan Wins	Kenny Friedman	15	

12pm

Title	Presenter	Notes	
PDR 1 + 2	with Professor Tim Lu		
Gravitational Waves - Ripples in Spacetime	Jason Liang	5	*
Teach computers to filter spam: a mathematical approach	Blake Elias	5	
Candy Queues: Explaining Internet Access with a Candy Factory	Jeremy Ellison	5	
Curing Cancer with Living Drugs	Margaret Guo	5	
How your fitness trackers find your Heart Rate	Zixi Liu	5	
Twenty Chimneys	with Professor Muriel Medard		
The Button Gmail's Missing: "Compress It"	Nichole Clarke	9	*
MergeSort: putting everything in its place	Lee Gavrin	9	
Rockets!	Joe Kusters	9	
The Surreal Numbers	Kevin Phillips	9	
How tuning a radio works	Allan Sadun	9	
Mezzanine Lounge	with Professor Luís Velásquez-García		
CRISPR: How we can edit our DNA	Arturo Campos	15	*
Bloom Filters. Easily remember something you have seen before.	Donald Little	9	
An Inside Look at Counting Cards in Blackjack	Jeremy Bogle	15	
The Pigeonhole Principle, Why Perfect File Compression Is Impossible	Deanna Heer	14	
Preventing Race Conditions in Concurrent Programming	Matthew Kalinowski	15	>
Coffeehouse Lounge	with Alex Chumbley		
Quantum Superposition: When guessing is good enough	Dencil Wilmot	5	*
What the future sounded like	Alex Souvannakhot	5	
How to stream Netflix, FaceTime, and go on Facebook all at the same time	Tamar Weseley	5	
CRISPR/Cas9	Colin McDonnell	15	
How to End the World	Gabrielle Rivera	9	
PDR 4	with Virginia Chiu		
Through the Galactic Looking Glass: How We Can See 13 Billion Years Into the Past and Why That Matters for the GPS in Your Phone	Lily Zhou	13	*
The Transistor	Daniel Moon	13	
Real Life Mind Control	Michaela Ennis	13	
Prisoner's Dilemma: To Tell or Not to Tell	Morgan O'Brien	13	
Max Flow: The Secret to Plumbing and Warfare	Devin Neal	11	>

1pm

Title	Presenter	Notes
PDR 1 + 2	with Emily Zhang	
How to Build a Supercar	Liza Gaylord	14 *
Over and Over Again: Fractals and Their Applications	Akshay Ravikumar	17
Who should be in charge? Leader election in a distributed network	Barbara Duckworth	15
Counting to Infinity	Weilian Chu	14
Designing Randomness in Video Games	Logan Martin	10
(no title)	Andre Mroz	
Twenty Chimneys	with Dr. Jason Miller & Nikhil	
Don't Jump to Conclusions: Good Statistics Can Lead to Bogus Conclusions	Victoria Xia	11 *
Getting Close Enough to the Point	Emmanuel Fasil	12
Buck Converters	Andre Walker	10
Writing Better Computer Programs, Automatically	Zachary Neely	10
Hijacking the Immune System	Maria Karelina	10

Special thanks to:

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Jennifer Zhang and TechX
MIT CAC
Emily Zhang (MIT)

my.notes

Dear High School Student,

We hope you enjoyed your visit to MIT! We'd like some feedback to improve the experience for future conference attendees like yourselves. Please answer all of the following questions:

About You Please circle the best answer(s):

I am a high school: { freshman sophomore junior senior } I am: { male female }

I've taken: { AP math AP chem AP physics AP bio programming }

In general, I found the talks { too hard just right too easy } to understand

In general, I understood { all most some a few none } of them.

I am considering a technical career (in science, engineering, math, technology, etc) { yes no }

About Your Day
For each hour, write the name of the room moderator, and the title/presenter of the best talk of that hour.

Timeslot	Room	Best Presenter in Room during this Timeslot
9:00 am – 10:00 am		
10:00 am – 11:00 am		
11:00 am – 12:00 pm		
12:00 pm – 1:00 pm		
1:00pm – 2:00pm		

What did you learn or like about it? (You can use the back of this sheet!)

Any feedback you want to relay to any of the presentations you heard? (You can use the back of this sheet!)

Turn in this form for a piece of candy!