

# conference.program

3.31.16

9am

Title	Presenter	Notes
<b>PDR 1 + 2</b>	<b>with Emily Zhang</b>	
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
<b>Twenty Chimneys</b>	<b>with Professor Muriel Medard</b>	
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
How To Throw An Unforgettable Party	Antoine Nasr	2
The Hodgkin-Huxley Model and Making Friends	Anita Liu	2
<b>Mezzanine Lounge</b>	<b>with Francis Chen</b>	
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
<b>Coffeehouse Lounge</b>	<b>with Alex Chumbley &amp; Dr. Jason Miller</b>	
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 (no title)	Nicholas McCoy	13
	Angel Carvajal	10
<b>PDR 4</b>	<b>with Virginia Chiu</b>	
One Bit Two Bit, Red Bit Qubit: Understanding Quantum Computers	Matt Basile	12 *
Saving Time with Shortest Path Algorithms	Antonio Rivera	13
Caching 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

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<b>PDR 1 + 2</b>	<b>with Professor Tim Lu</b>	
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
<b>Twenty Chimneys</b>	<b>with Professor Muriel Medard</b>	
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
<b>Mezzanine Lounge</b>	<b>with Francis Chen</b>	
Why We Can't See Through Walls	Devin Morgan	7 *
Electric Motors: Turning Electricity into Motion	Aaron Rose	7
(no title)	Thomas Harris	17
Making The Unknown Known	Kathleen Johnson	17
Interrupts: Ways to Manage Different Hats	David Kang	17
<b>Coffeehouse Lounge</b>	<b>with Alex Chumbley</b>	
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
<b>PDR 4</b>	<b>with Professor Sangeeta Bhatia</b>	
(no title)	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

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<b>PDR 1 + 2</b>	<b>with Professor Tim Lu</b>	
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
<b>Twenty Chimneys</b>	<b>with Professor Muriel Medard</b>	
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
(no title)	Hau Lian	8
<b>Mezzanine Lounge</b>	<b>with Nick Uhlenhuth*</b>	
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
<b>Coffeehouse Lounge</b>	<b>with Alex Chumbley</b>	
Springy Thingies Turned Digital: Cloth Simulation in	Emily Van Belleghem	4 *
Computer Graphics		
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
<b>PDR 4</b>	<b>with Professor Luís Velásquez-García</b>	
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

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<b>PDR 1 + 2</b>	<b>with Professor Tim Lu</b>	
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
<b>Twenty Chimneys</b>	<b>with Professor Muriel Medard</b>	
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
<b>Mezzanine Lounge</b>	<b>with Professor Luís Velásquez-García</b>	
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 >
<b>Coffeehouse Lounge</b>	<b>with Alex Chumbley</b>	
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
<b>PDR 4</b>	<b>with Virginia Chiu</b>	
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 >

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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	
<b>Twenty Chimneys</b>	<b>with Dr. Jason Miller &amp; Nikhil</b>	
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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