

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
How To Throw An Unforgettable Party	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 (no title)	Nicholas McCoy	13
	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
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

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

PDR 1 + 2

Words as vectors: analogies for computers!
 How Drugs Work: What Goes on Inside the Brain
 Magnets, How do They Work?
 Can you see my heart beating? Understanding Electrocardiogram
 Cycle Detection: Am I walking in Circles?

with Professor Tim Lu

Hairuo Guo 4 *
 Jasmeet Arora 4
 Kevin Chan 4
 Heejo Keum 4
 Heeyoon Kim 4

Twenty Chimneys

Sharing is Caring: Torrents Demystified
 Turning the real world into 1's and 0's
 Principles of 2D Printing
 Tricking users into unintentionally displaying your website.
 How to make electricity with a copper tube and a magnet

with Professor Muriel Medard

Julia Guo 8 *
 Amelia Becker 8
 Tucker Cheyne 8
 Will Haack 8
 Hau Lian 8

Mezzanine Lounge

How the Duck does Autocorrect Work?
 Fitting More Music on your iPod Using Fourier Transforms
 Not All Infinities Are Created Equal
 Hard problems are hard

with Nick Uhlenhuth*

Tilly Taylor 13
 Stephanie Pavlick 8
 Gerrod Voigt 16
 José Velarde 16

Coffeehouse Lounge

Springy Thingies Turned Digital: Cloth Simulation in
 Computer Graphics
 How to Make a "Stupid" Proof
 Coding and Cooking
 Radio Jamming and how to Protect Against it
 How Does the Internet Know You Are Human?

with Alex Chumbley

Emily Van Belleghem 4 *
 Cristina Mata 4
 Phillip Ai 12
 Alex Huang 11
 Roberto Soto 12

PDR 4

Quantum Tunneling
 Zero-Knowledge Proof: A Proof without The Real Proof
 How to Hide Your Identity Online
 PID Controllers: boat steering and moon landing
 Bézier Curves: How a Simple Plan Wins

with Professor Luís Velásquez-García

Mahmoud Ghulman 10 *
 Laponchai Jirachuphun 10
 Víctor Lopez 16
 Vahid Fazel-Rezai 15
 Kenny Friedman 15

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 >

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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

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