Department of
Civil & Environmental Engineering
Massachusetts Institute of Technology

Carnegie Mellon
SILICON VALLEY

Real-Time Rides: The Smart Roadmap to Energy and Infrastructure Efficiency

MIT/CMU Workshop Goals

With some exciting developments in the provision of rideshare services, MIT's Real-Time Rides research team, in collaboration with Dr. James (Jim) Morris from Carnegie Mellon Silicon Valley, aim to bring together interested parties to discuss potential future directions for ridesharing. The primary objective of the Real-Time Rides Workshop is to facilitate discussion among the various rideshare stakeholders with the goal of developing strategies that both address barriers to rideshare participation, and promote the widespread implementation of real-time ridesharing. The participants are drawn from the various stakeholder groups who have important roles to play in the future of ridesharing including service providers, technology firms, government, and academia.

The general format consists of topic-based sessions that will start with short presentations by the research teams and selected workshop attendees, followed by both structured and open discussion among all participants. A critical focus of the workshop is to address the behavioral, economic, institutional, policy, technological, and business issues at the heart of achieving successful real-time ridesharing implementations, higher market penetration, and wide-scale use. The research team's focus is on bringing interested parties in the rideshare field together to share ideas; the team does not plan on developing any form of rideshare application or service, and does not intend to advocate for any particular technology or service provider.

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MIT/CMU Workshop Agenda

Thursday, April 16, 2009

9:30 – 10:00 am: [Spofford Room, Building #1, Room #236 (1-236)]
Registration/Continental Breakfast provided by the MIT Real-Time Rides Research Team

10:00 – 10:30 am: [Building #3, Room #343 (3-343)]
Introduction: John Attanucci (MIT) and Michael Messner (Seminole Capital Partners)

- Introduction of Organizers
- Introduction of Participants
- Workshop Charge and Goals

10:30 – 11:00 am: [Building #3, Room #343 (3-343)]
Setting the Stage: Past and Present Rideshare Markets

- 10:30 – 10:45 am: (Andrew Amey and Valerie Webb, MIT) – Statistics and Historical Trends
- 10:45 – 11:00 am: (Jim Morris, CMU West) – RideFriends: More Rides, Fewer Cars

11:00 am – 12:30 pm: [Building #3, Room #343 (3-343)]
Topic 1: Historical Ridesharing Trends and Market Potential
[Moderated By Jim Morris]

- 11:00 – 11:15 am: (Eric Schreffler, Consultant) – Real-time Ridesharing: A Historic, Heuristic and sometimes Hysteric Perspective
- 11:15 – 11:30 am: (Rick Steele, NuRide) – Maintaining Ridesharing During an Economic Downturn
- 11:30 – 11:45 am: (Paul Resnick, University of Michigan) – Assessing Demand Before There's a Service
- 11:45 – 12:30 pm: Feedback and Discussion on Topic 1

12:30 – 1:45 pm: [Spofford Room, Building #1, Room #236 (1-236)]
Lunch Provided by the MIT Real-Time Rides Research Team, Walk to MIT Faculty Club

1:45 – 3:15 pm: [MIT Faculty Club, Building E52, 6th Floor]
Topic 2: Behavioral and Attitudinal Characteristics of Travelers - Role of Incentives and How to Overcome Safety & Security Concerns
[Moderated by Rabi Mishalani]

- 1:45 – 2:00 pm: (Susan Squires, Trinity College) – Perceptions of the Private Vehicle in the US: Public Identity vs. Private Space
- 2:00 – 2:15 pm: (Ted Selker, CMU West) - Incentives and Improvements in Lifestyle with Ridesharing
- 2:15 – 2:30 pm: (Kursat Ozenc, CMU) – Saferide: Alternative Ways of Commuting

- 2:30 – 3:15 pm: Feedback and Discussion on Topic 2

3:15 – 4:15 pm: [MIT Faculty Club, Building E52, 6th Floor]
Topic 3: Role of Different Levels of Government in Support of Ridesharing.
[Moderated by John Attanucci]

- 3:15 – 3:30 pm: (Allen Greenberg, FHWA) - Lessons Learned about Real-time Ridesharing and Governmental Considerations for Future Support
- 3:30 – 3:45 pm: (Kay Carson, MassRides) Massachusetts: A Statewide Approach to Ride-Sharing
- 3:45 – 4:15 pm: Feedback and Discussion on Topic 3

4:15 – 6:00 pm: [MIT Faculty Club, Building E52, 6th Floor]
Service Provider Presentations on history of their company, interest in ridesharing, demonstration of their product, and vision of the future
[Moderated by Valerie Webb]

6:00 – 6:45 pm: [MIT Faculty Club, Building E52, 6th Floor]
First Day Wrap-up & Pre-Dinner Drinks

6:45 pm: [MIT Faculty Club, Building E52, 6th Floor]
Dinner at the MIT Faculty Club provided by the Real-Time Rides Research Team

Friday, April 17, 2009

8:00 – 8:30 am: [Spofford Room, Building #1, Room #236 (1-236)]
Continental Breakfast provided by the MIT Real-Time Rides Research Team

8:30 – 10:00 am: [Building #3, Room #343 (3-343)]
Topic 4: Role of Technology Firms in Supporting Wider Rideshare Participation & Providing Multi-Modal Travel Information
[Moderated by Jim Morris]

- 8:30 – 8:45 am: (Damien Balsan, Nokia) – Using NFC Phones to Find, Confirm, and Pay for Rides
- 8:45 – 9:00 am: (Rizwan Khaliq, IBM) – IBM Traffic Prediction and the Provision Traveler Information
- 9:00 – 10:00 am: Feedback and Discussion on Topic 4

10:00 – 10:45 am: [Building #3, Room #343 (3-343)]
Topic 5: Role of Employers, Universities & Other Institutions in Support of Ridesharing
[Moderated by Eric Schreffler]

- 10:00 – 10:15 am: (Charlie Crissman, Goose Networks) – Tradeoffs Between Broad Public Programs and Smaller Closed-Loop Programs
- 10:15 – 10:45 am: Feedback and Discussion on Topic 5

10:45 am – 12:00 pm: [Building #3, Room #343 (3-343)]
Topic 6: Value and Opportunities for a Common Database Feed among Providers
[Moderated by Andrew Amey]

- 10:45 – 11:00 am: (Carl Gorringe, 511.org) - OpenTrip: An Open Protocol for the Interchange of Travel Information Among Rideshare Providers
- 11:00 – 11:15 am: (Harvey Applebe, Avego) – Extending and Applying Open Protocols to Allow Dynamic Travel to Interoperate
- 11:15 – 12:00 pm: Feedback and Discussion on Topic 6

12:00 – 1:00 pm: [Spofford Room, Building #1, Room #236 (1-236)]
Lunch Provided by the MIT Real-Time Rides Research Team

1:00 – 3:00 pm: [Building #3, Room #343 (3-343)]
Topic 7: Innovative Models for Rideshare Service Provision
[Moderated by Eric Schreffler]

- 1:00 – 1:15 pm: (John Zimmer and Matt Malloy, Zimride and ZipCar) – Joint carshare-rideshare concept
- 1:15 – 1:30 pm: (Amol Brahme, iCarpool) - Integration of Real-Time Ridematching with Traditional Carpool and Vanpool
- 1:30– 1:45 pm: (Paul Minett, Trip Convergence) - Casual Carpooling as a Model for Real-Time Ridesharing
- 1:45 – 2:00 pm: (Rob Content, Community Solutions) - The Smart Jitney: Rapid, Realistic Transportation Reinvention
- 2:00 – 3:00 pm: Feedback and Discussion on Topic 7

3:00 – 3:30 pm: [Building #3, Room #343 (3-343)]
Workshop Summary and Follow-up Actions: John Attanucci, Rabi Mishalani, & Jim Morris

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MIT/CMU Confirmed Workshop Attendees as of April 9, 2009

Name	Organization	E-mail
Rideshare Providers with Existing Service		
Mr. Harvey Appelbe	Avego by Mapflow	harvey.appelbe@mapflow.com
Mr. Jason Conley	Avego by Mapflow	jason.conley@avego.com
Mr. Steffen Frost	Carticipate	frost@carticipate.com
Mr. Darius Roberts	Carticipate	
Mr. Ross Edgar	CommuterConnections	redgar@mwcog.org
Mr. Stephen Finafrock	CommuterConnections	sfinafrock@mwcog.org
Ms. Robin Chase and/or Mr. Mark Chase	GoLoco	robin@goloco.org, mark@goloco.org
Mr. Roy Russell	GoLoco	roy@goloco.org
Mr. Charlie Crissman	Goose Networks	charlie@goosenetworks.com
Mr. Amol Brahme	iCarpool - Representing RideShare Online	amol@icarpool.com
Ms. Kay Carson	MassRides	kay.carson@state.ma.us
Mr. Leon Papadopoulos	MassRides	leon.papadopoulos@state.ma.us
Mr. Rick Steele	NuRide	rsteele@nuride.com
Representative	PickUpPal	
Mr. Jeffrey Chernick	RideAmigos	jeff@rideamigos.com
Mr. John Zimmer	ZimRide	john@zimride.com
Organizations that Enable Ridesharing		
Mr. Rizwan Khaliq	IBM	rizkhaliq@us.ibm.com
Mr. Damien Balsan	Nokia	damien.balsan@nokia.com
Mr. Matt Malloy	ZipCar	matt@zipcar.com
Academic / Public Agency Representatives		
Mr. Carl Gorringe	511.org Rideshare	carl@gotalift.com

Dr. Ted Selker	CMU Silicon Valley, Associate Director Mobility Research	ted.selker@west.cmu.edu
Mr. Kursat Ozenc	Carnegie Mellon, School of Design	kursat@cmu.edu
Mr. Allen Greenberg	FHWA Congestion Management and Pricing Team	Allen.Greenberg@dot.gov
Dr. Susan Squires	Technology Research for Independent Living Centre, Trinity College Dublin	Susan.Squires@acelere.net
Ms. Kristin Lovejoy	UC Davis, Institute of Transportation Studies	kelovejoy@ucdavis.edu
Dr. Paul Resnick	University of Michigan, School of Information	presnick@umich.edu
Other Representatives		
Ms. Marianne Tyrrell	British Consulate-General, Science and Innovation Team	mariannetyrrell@gmail.com
Ms. Neelangi Gunasekera	British Consulate-General, Science and Innovation Team	neelangi.gunasekera@fconet.fco.gov.uk
Mr. Jim Gascoigne	Charles River Transportation Management Association	jim@charlesrivertma.org
Mr. Rob Content	Community Solutions	rob@communitysolution.org
Mr. David Grennan	Independent Consultant	edavidgrennan@gmail.com
Mr. Larry Brutti	MIT Parking Office	lrbrutti@mit.edu
Ms. Anna Jaffe	MIT VDS Group	ajaffe@MIT.EDU
Mr. Lorenzo Davoli	MIT VDS Group	
Mr. Mike Messner	Seminole Capital	mmessner@seminolecapital.com
M. Antoine Averseng	Trade Office - Embassy of France	antoine.averseng@missioneco.org
Mr. Eric Schreffler	Transportation Consultant (ESTC) & Chair, TRB Policy Section	estc@san.rr.com
Mr. Paul Minett	Trip Convergence Ltd	paulminett@tripconvergence.co.nz
Ms. Holly Parker	Yale University, Director of Sustainable Transportation	holly.parker@yale.edu
MIT/CMU Rideshare Research Teams		
Dr. Jim Morris	Carnegie Mellon Silicon Valley	jim.morris@west.cmu.edu
Mr. John Attanucci	MIT Rideshare Research	jattan@mit.edu
Dr. Rabi Mishalani	The Ohio State University	mishalani@mit.edu
Andrew Amey	MIT Rideshare Research	amamey@mit.edu
Valerie Webb	MIT Rideshare Research	vwebb@mit.edu

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MIT/CMU Workshop Presentation Titles and Abstracts

Thursday, April 16, 2009

Topic 1: Historical Ridesharing Trends and Market Potential

Presenter: Eric Schreffler, Transportation Consultant (ESTC) & Chair, TRB Policy Section
Title: Real-time Ridesharing: A Historic, Heuristic and sometimes Hysteric Perspective
Abstract: Ridematching has been a backbone of efforts to induce commuters to use alternative modes -- in this case, sharing their ride within another traveler. Such programs started with manual ridematching before and during WW II. The advent of ICT (information and communications technology) elevated ridematching by introducing computerized ridematching using DIME files for geo-coding. Today, a new set of products is being forwarded using real-time travel data and PDAs. This offers the potential user powerful and useful information on available shared ride opportunities. However, such systems seem to have found a somewhat limited market in occasional, discretionary trip-making. This is clearly a new market for ridesharing, but one that may not maximize the fulfillment of congestion relief, accessibility, air quality and energy goals. So, the question of "is real-time ridesharing effective or cost effective?", the answer is, unfortunately, "it depends."

Presenter: Rick Steele, NuRide
Title: Maintaining Ridesharing During an Economic Downturn
Abstract: Gas prices reached all time highs in the summer of 2008, which resulted in dramatic increases in demand for carpooling. However the party ended abruptly in September 2008 as gas prices tumbled, reaching 5-year lows by the end of 2008. At the same time the U.S. economy entered into a severe downturn resulting in increased unemployment and fewer commuters driving to work. So with record low gas prices, rising unemployment and less traffic due congestion, how do you get commuters interested in ridesharing? NuRide will share the results from a series of initiatives it undertook in Houston to combat these macro-economic conditions.

Presenter: Paul Resnick, Professor - University of Michigan School of Information
Title: Assessing Demand Before There's a Service
Abstract: How good does a ride matching service have to be in order to be utilized? The answer is critical for assessing whether services have a chance of being adopted, if marketed effectively. But the answer depends on many factors,

including regional and individual differences. In response to generic scenarios, riders and drivers may not be able to accurately predict their own future behavior. I will sketch a proposal for demand estimation based on highly personalized scenarios that ask drivers and riders to reflect on their actual recent travel behavior, as automatically recorded by a mobile device.

Topic 2: Behavioral and Attitudinal Characteristics of Travelers - Role of Incentives and How to Overcome Safety & Security Concerns

Presenter: Susan Squires, Technology Research for Independent Living Centre, Trinity College Dublin
Title: Perceptions of the Private Vehicle in the US: Public Identity vs. Private Space
Abstract: Since at least the 1930s (Blumer 1937) researchers have been fascinated by the place and meaning of the automobile in American culture. Almost all studies, however, have focused on the car as a metaphor for, or symbol of individual expression of self, class and role within the public space (Heffner, Turrentine, Kurai 2006). But what about the automobile's interior space? Do these meanings apply to the private spaces as well as the public? In 2000, I conduct ethnographic research on the uses and associated meaning of the car's interior spaces. Using Goffman's concepts of private and public (1956), this presentation explores the differing meaning of the car as a public statement of identity and a private interior space. Understanding the association of private and car interior has consequences for the meaning, and possible success, of ride sharing.

Presenter: Ted Selker, Carnegie Mellon Silicon Valley
Title: Incentives and Improvements in Lifestyle with Ridesharing
Abstract: People commute in cars, rarely meeting the people next to us that are traveling along almost the same route. The same route can be defined in a ridesharing experience as it was in mine: a commitment to be at the same place and time to go with a specific group. This was difficult for me and others to accomplish. This talk will describe a new paradigm in which people have many reasons to meet with others: social, educational, and for transport. The goal will be to set up an economy of experiences that ridesharing will play into. People will express why they might travel with another and when. The economy will value that and attempt to match the experience with the opportunity. People might travel together to study together, discuss a hobby or childrearing.

Presenter: Kursat Ozenc, PhD Student – Carnegie Mellon University
Title: SafeRide: Alternative Ways of Commuting
Abstract: A national survey found that 76% of the working population in United States drives to work by themselves. On average, it takes people 30-40 minutes each way to travel to work. For some people commuting time is an isolated time of the day, blended with stress and anxiety. For others it is an opportunity to relax, and transition between their work and family roles. The goal of this project is to understand both the positive and negative aspects of commuting, and to design a ridesharing service concept that will leverage technology to overcome obstacles that such services have traditionally encountered. We conducted semi-structured interviews with thirty commuters in the Carnegie Mellon University community,

including solo drivers, carpoolers and bus riders. We observed that convenience, cost and personal preferences motivate commuting choices. Commuters who talked about convenience were primarily interested in commuting options that allowed them to maintain a flexible schedule. Commuters who talked about cost talked about both time and money spent on commuting. Commuters who talked about personal preferences often mentioned preferences regarding conversation during their commute. Once commuters establish a routine, they tend to continue commuting using their chosen method. We are currently working on design concepts that leverage insights gained from these interviews. We plan to evaluate these design concepts with people who are currently casual carpooling in the Bay area.

Topic 3: Role of Different Levels of Government in Support of Ridesharing

Presenter: Allen Greenberg, FHWA
Title: Lessons Learned about Real-time Ridesharing and Governmental Considerations for Future Support
Abstract: Real-time ridesharing tests have mostly, but not always failed and lessons can be drawn from both successful and failed efforts. The potential benefits of real-time ridesharing are enormous, including enhanced affordable mobility and reduced vehicle-miles traveled, leading to congestion and emissions reductions and infrastructure-cost savings. It is because of these potential benefits that governmental support of dynamic ridesharing may be attracted. Projects proposed for such support must take lessons from previous and on-going effort to heart (including from the successes of casual carpooling) in order to receive favorable consideration.

Presenter: Kay Carson, MassRides – Massachusetts Executive Office of Transportation
Title: Massachusetts: A Statewide Approach to Ride-Sharing
Abstract: The presentation will include a short history of ridesharing in Massachusetts over the past few decades followed by a description of the state's approach to staffing, marketing, and tools (e.g. phone support, active website, etc.) It will conclude with a discussion of what Massachusetts is looking forward to expand and improve its ride-matching program.

<u>Friday, April 17, 2009</u>

Topic 4: Role of Technology Firms in Supporting Wider Rideshare Participation & Providing Multi-Modal Travel Information

Presenter: Damien Balsan, Nokia
Title: Using NFC Phones to Find, Confirm, and Pay for Rides
Abstract: [Abstract Pending]

Presenter: Rizwan Khaliq, IBM
Title: IBM Traffic Prediction and the Provision Traveler Information
Abstract: The presentation start with a high level overview of IBM's current Intelligent Transportation Systems (ITS) work, and will follow with a demonstration of the

IBM Traffic Prediction solution. This solution is currently in use in Singapore and allows for the prediction of where traffic will occur, prior it to it happening. With the ability to predict events such as heavy traffic congestion and communicate that information to travelers prior to its occurrence, travelers may make more informed choices regarding their mode of travel.

Topic 5: Role of Employers, Universities & Other Institutions in Support of Ridesharing

Presenter: Charlie Crissman, Goose Networks
Title: Tradeoffs Between Broad Public Programs and Smaller Closed-Loop Programs
Abstract: [Abstract Pending]

Topic 6: Value and Opportunities for a Common Database Feed among Providers

Presenter: Carl Gorringe, 511.org Rideshare / Gotalift
Title: OpenTrip: An Open Protocol for the Interchange of Travel Information Among Rideshare Providers
Abstract: This talk will introduce OpenTrip, an open XML data format for exchanging trip data, and a brief look at an example at www.opentrip.info. It will open with a round-table discussion on how we can improve collaboration, why we should use a common data format, how to encourage implementation, and what should be our next steps moving forward. If there is interest, there can also be discussion on the technical details of the current specification.

Presenter: Harvey Appelbe, Avego
Title: Extending and Applying Open Protocols to Allow Dynamic Travel to Interoperate
Abstract: This presentation will discuss how to extend protocols to allow many transport modes, such as taxi, shuttle bus, van pool, hourly car rental, scheduled transport (trains, bus), dynamic ride sharing to interoperate, in real-time. It will propose a superstructure that allows interoperable services to register and discover other services.

Topic 7: Innovative Models for Rideshare Service Provision

Presenter: John Zimmer and Matt Malloy, Zimride and Zipcar
Title: Joint Rideshare-Carshare Concept
Abstract: In an era in which increasing numbers of people are turning to the Web and their social networks as the primary way of communicating, organizing their day and planning events, it's more important than ever to connect our physical world with the virtual world. Zipcar leverages Web, wireless and hardware technologies to make reserving and using a car by the hour as easy as getting cash from an ATM. Zimride leverages the power of social networks, consumer ratings/rankings and Web 2.0 to make finding and sharing a ride a snap. Together, they allow people to build friendships, share experiences, save money and reduce emissions. As leaders in their respective markets, car sharing and ridesharing, Zipcar and Zimride are well poised to co-present current and future ridesharing trends.

Presenter: Amol Brahme, iCarpool – Representing RideShare Online
Title: Integration of Real-Time Ridematching with Traditional Carpool and Vanpool
Abstract: In 1991, Washington State passed a law called the Commute Trip Reduction Law that has shaped transportation demand management programs in the state for the past 17 years. It has driven the development of innovative programs that support reduction in drive alone commuting at the county, city and employer levels. One of these programs RideshareOnline.com, is planning to implement the next generation of ridematch technology in 2009 in the tri-state area of the Pacific Northwest encompassing Washington, Oregon and Idaho.
With the advent of newer technology such as smart phones and SMS, dynamic carpool (also known as real time ridematching) is seeing increased interest from employers, agencies and the public because it provides much needed flexibility which is not found in traditional carpool/vanpool. The presentation compares dynamic carpool with traditional carpool and vanpool in terms of merits and demerits of each. The presentation also covers why neither traditional carpool nor dynamic carpool can solve the user's needs by itself. The approach taken by RideshareOnline.com is to integrate dynamic carpool trips with traditional carpool trips to increase the potential pool of available matches for both types of trips.

Presenter: Paul Minett, Trip Convergence Ltd
Title: Casual Carpooling as a Model for Real-Time Ridesharing
Abstract: TCL has developed flexible carpooling, a system that builds on casual carpooling and slugging. We will present information about:

- Casual carpooling
- Our approach, flexible carpooling
- The technologies we have developed to facilitate flexible carpooling
- Other vehicle occupancy raising strategies that the technology supports.

Casual car pooling is probably the most effective system of real time ridesharing in existence, accounting for as many as 13,000 rides each day with no pre-arrangement, in 6,500 single use, three person car pools. We will explain why we believe that for increased car pooling the authorities should provide meeting places, not databases.

Presenter: Rob Content, Program Manager, Community Solutions
Title: The Smart Jitney: Rapid, Realistic Transportation Reinvention
Abstract: The Smart Jitney is a system of efficient and convenient ride sharing that addresses in the short-term the problem of transportation in a post-peak oil world. The system utilizes the existing infrastructure of private automobiles and roads due to the time, expense, and difficulty of building a new transportation infrastructure amongst such a dispersed population. The Smart Jitney system would use cell phones and the Internet for ride reservations and coordination. Riders and drivers would have modified cell phones with a GPS function. The goal of the system is to insure that each private car always carries more than one person per car trip, optimally 4-6. This would cut auto gasoline usage by an estimated 80 percent and commute time by an average of 50 percent within two years.

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MIT/CMU Workshop Information

Start Time: 9:30 AM on Thursday, April 16th
End Time: 3:30 PM on Friday, April 17th

Locations: Building #3, Room #343 (3-343)
(http://whereis.mit.edu/map-jpg?mapterms=3-343&mapsearch=go)
Spofford Room, Building #1, Room #236 (1-236)
(http://whereis.mit.edu/map-jpg?mapterms=1-236&mapsearch=go)
MIT Faculty Club, Building E52, 6th Floor
(http://whereis.mit.edu/map-jpg?mapterms=faculty+club&mapsearch=go)

A map of MIT's campus is available at:
http://web.mit.edu/campus-map/pdf/campusmap.pdf

Directions to MIT From Airport:

Public Transportation

Silver Line (SL1) to South Station
Red Line Inbound to Kendall/MIT

Car

Take Callahan Tunnel from the Airport roadway
Take MA-1A S to Embankment Rd/MA-28/MA-3/Storrow Drive
Slight right at Storrow Drive
Take ramp on left to Harvard Bridge/MA-2A/Massachusetts Ave
Turn right at Harvard Bridge/MA-2A/Massachusetts Ave

Parking

Please contact Ms. Ginny Siggia at 617-258-8131 if you will need parking and she will email you a permit for a nearby MIT lot.

Contact Names and Numbers:

Andrew Amey	703-869-3019	amamey@mit.edu
Valerie Webb	440-339-3296	vwebb@mit.edu

Please feel free to call if you have any questions about getting to the event.

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Map of Hotels and MIT/CMU Workshop Locations