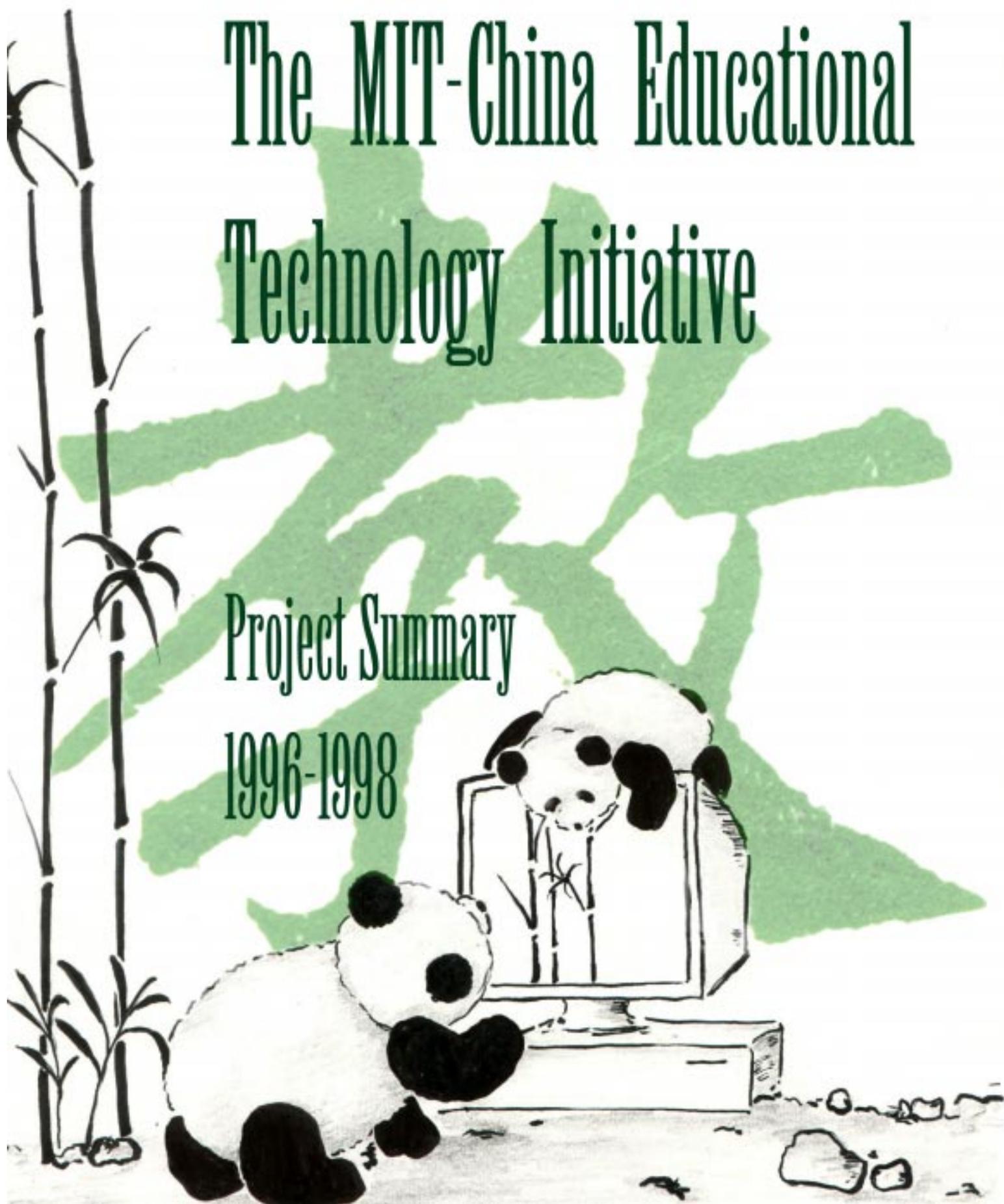


# The MIT-China Educational Technology Initiative

Project Summary  
1996-1998



# MIT-China Educational Technology Initiative (MIT-CETI)

292 Main Street  
Cambridge, MA 02139

Tel: (617) 258-7331

Fax: (617) 258-8048

E-mail: [ceti@mit.edu](mailto:ceti@mit.edu)

<http://web.mit.edu/mit-ceti/www>



## *Written and Edited By:*

Roger Hu  
Monisha Merchant

Ron Cao  
Dan Dwyer  
Mingxi Fan  
Dan Hu  
Richard Li  
Martin Mbaya  
Xiaomin Mou  
Jake Seid  
Morris Tao  
Sarah Wu

*Special Thanks To:*  
Suzanne Berger  
Mark Eykholt  
Deborah Ullrich

*Cover Design By:*  
Dan Hu  
Nina Yu

*Artwork By:*  
ChangQing Zheng



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# FOREWORD

Roger Hu



*In short, this program has been our passion, our pride, and our joy.*

Companies often issue annual reports which communicate information to those who have a stake in their organizations. Because of the support received from many companies, institutions, and foundations in the MIT China Educational Technology Initiative (MIT-CETI), we felt it necessary to do something similar. While we may never turn a profit, we hope that those who have investments in this organization will take great satisfaction in reading this report.

At the same time, we thought it important to communicate our story to the rest of the world. This organization is often dubbed a program connecting Chinese high schools to the Internet. While this is true, it leaves out the most important aspects – the unique cooperative effort between MIT, Chinese institutions, and United States corporations, the culture shock, the friendships, and the sense of entrepreneurship.

*In short, this program has been our passion, our pride, and our joy.*

For the past few months, we've dedicated our time to compose, revise, and publish the stories that are contained in this document. A great

deal of emphasis has been placed on making sure that the material is well presented. We hope you will derive as much satisfaction reading the document as we have experienced in producing it.

## ACKNOWLEDGEMENTS

This document is dedicated to those who have made this program possible, especially to the Freeman Foundation, the MIT International Science and Technology Initiative (MISTI), Professor Suzanne Berger, Deborah Ullrich, Mark Eykholt, Seth Jameson, Bob Linton, Scott Shurtleff, Li Xing, and Chief Technology Officer (CTO) for Intel China Robert Yung (formerly the CTO for Sun Microsystems Asia).

Thanks also go out to the corporate representatives from Accton, Addtron, Anixter, Cisco Systems, Kodak, Microsoft, Northern Telecom, Proxim, Sun Microsystems, and Zi Corporation, especially Matt Aver, Jessica Chan, Kenneth Chu, Gene Deutsch, Gabriel Leung, Rebecca Needham, and James Peng.



# OVERVIEW

The MIT-China Educational Technology Initiative (MIT-CETI) provides the opportunity for MIT students to spend six weeks in a team of two or three people at a Chinese high school. Each team is giving maximum flexibility in designing and developing their projects.

The program originated from a proposal submitted to the Eloranta Fellowship by Ron Cao and Jake Seid, two MIT graduate students in the Electrical Engineering and Computer Science Department. The success of the project, proposed as the Computer Education Development (CEDI), led to

the creation of what is now known as the MIT-CETI program.

Applicants are selected based on four criteria: fluency in the Mandarin language, technical competency, personal initiative, and interest in education. Each applicant is interviewed thoroughly, and their skills are tested and evaluated by people who are technical and language experts. We try very hard to insure that each accepted applicant is grouped into a team of two or three with complementary talents.

Below is a history of the schools, location, and teams.

Teams	School	Location
<i>1998</i>		
Xiaomin Mou and James Montgomery	High School Attached to Tsinghua University	Beijing
Min Huang, Alex Pi, and Matt Debski	Experimental High School Attached to Beijing Normal University	Beijing
Ying Cao and Ted Weiderhold	Experimental School Attached to People's University	Beijing
Morris Tao, Sarah Wu, and Andrew Wheeler	High School Attached to Beijing University	Beijing
Omprakash Gnawali, Matt Karau, and Shan Wang	Number Two Secondary School Attached to East China Normal University	Shanghai
Changqing Zheng, Martin Mbaya, and Andrew Nevins	High School Attached to Fudan University	Shanghai
Nina Yu, Monisha Merchant	High School Attached to Shanghai Jiaotong University; No. 3 Girls' School	Shanghai
Mingxi Fan, Christine Su, Lauren Fletcher	Shanghai Experimental School	Shanghai
Hugo Lin and Bryant McLaughlin	Middle School Attached to Xi'an	Xi'an
<i>1997</i>		
Dan Hu and Dan Dwyer	Number Four High School	Beijing
Shamsul Sopiae and Sally Yu	High School Attached to Tsinghua University	Beijing
Roger Hu, Ting Luo, and Mandy Mobley	Number Two Secondary School Attached to East China Normal University	Shanghai
Sabrina Dong, Lei Wang, and Alice Yang	High School Attached to Fudan University	Shanghai
Richard Li, James Montgomery, and Xiaomin Mou	Middle School Attached to Xi'an Jiaotong University	Xi'an



*“I’m amazed at [the M.I.T. students’] energy level. It was finals week at M.I.T. [and] I still get E-mail from them at 3 in the morning. I look at them and say, ‘Why don’t I take care of this problem? You go and study.’”*

*--Robert Yung,  
Chief Technology  
Officer for Intel China*

# OUR VISION

*Dan Dwyer and Roger Hu*



*Our aim is to  
promote  
technology,  
entrepreneurship,  
and international  
understanding.*

*“The new MIT China involvement is part of a new vision of education and research at the Institute. In this vision, the internationalization of knowledge, innovation, and economy is the central tendency of the 21<sup>st</sup> century.... To acquire the capabilities to participate fully in such a world – and for our society to be able to benefit from such changes – new kinds of education and research are needed. MIT’s new [program] on China...step in the direction of internationalizing education and research at the Institute.”*

*Professor Suzanne Berger*

*Director, MIT International Science and Technology Initiative  
The MIT-China Report, 1997*

**O**ne of the most influential effects of technology on our society is the way in which it brings people together by providing ease of communication. The Internet is the greatest leap in this effort, now connecting society on a global scale never seen before in human history. This globalization of information will lead to a future requiring a fluency not only in technology, but also in cross-cultural understanding. This is one of the strengths of the MIT-CETI program.

In the attempt to carry a basic knowledge of information and educational technology to teachers and students in China, doorways to other forms of learning are opened. All those participating in this project, interns here and high schools there, are presented with the opportunity to interact in a new form of international cooperation.

MIT-CETI is currently exploring new ways of using these technologies for cooperation. Such ideas as international e-mail exchange and collaborative projects performed completely using the tools provided by the Internet expose all involved to the society of the future.

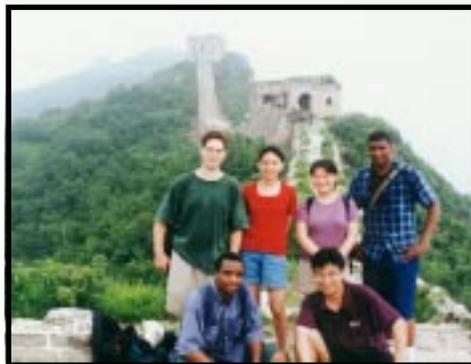
This learning is not

limited to the educational system. Already, MIT-CETI and high schools have been working along side huge multinational technological corporations to expand access to these tools across China. This has given an entrepreneurial learning component to the program, which is essential to all those who will participate in future technological businesses here and in China.

The program has major accomplishments. Past pioneers have set up the first web server for a high school in China, connected a school to the Internet through wireless technology, and helped to bridge cultural gaps between numerous students in the United States and China. In addition, the program inspired the creation of several others, including the MIT-India program and an Asian business program at Stanford University.

Much of the funding comes from the Freeman Foundation and the MIT International Science and Technology Initiative (MISTI), which provides work and study-abroad opportunities for MIT students. Corporate sponsors have also helped by providing much needed equipment. Last year’s commitments totalled over a quarter of million dollars.

MIT-CETI is constantly in search of new ways to expand this learning experience and the use of technology in education. Our aim is to promote technology, entrepreneurship, and international understanding.



# CEDI

Ron Cao and Jacob Seid

*“News articles [Ron and Jake] read in 1996 described China as extremely cautious in its exploration of the Internet. Those who did have Internet accounts had to register with the police, and those who applied for accounts had to sign an agreement to abide by Chinese law and not endanger state security. The M.I.T. students soon learned, however, that they could set up sites on the Chinese Educational Research Network, which connects all the universities.”*

*The New York Times  
July 30, 1998*

Our personal story is a shared one. It's a story about the “CEDI” before there was a CETI; a story about our experiences during the summer of 1996 in China and the impact it had on our lives and about our desire to allow other MIT students to experience the same sense of personal growth that we did while in China through a new program called MIT-CETI.

In 1996, the two most talked about things seemed to be the Internet and China's increasing presence in the global economy. MIT was teaching us about the technology but we wanted to learn more about China. The result of this desire was to submit a proposal to MIT's Eloranta Fellowship and the MIT



International Science and Technology Initiative (MISTI) for funding. The proposal, called the “Computer Educational Development Initiative (CEDI) in Shanghai, China,” described our interest in going to a high school in China, connecting it to the Internet, and teaching the students about how to use the Internet for educational purposes. We saw this not only as a great opportunity to apply what we had learned at MIT but, more importantly, as an opportunity to learn more about China.

At the end of our six weeks in China, we realized our experience had very little to do with applying what

we learned in school or learning more in detail about China. Instead, it had everything to do with the incredible sense of entrepreneurship we experienced and the opportunity to learn more about the Chinese people. In the process of working with students and teachers at the high school, we realized we had built more than just a connection to the Internet—we had built friendships. They were friendships built on the need for trust, the need to work together, and the need to excuse the occasional cultural faux pas. It taught us that, to understand more about China, you have to understand its people.

Our CEDI experience during the summer of 1996 changed us. Being able to implement a completely self-initiated project gave us a tremendous amount of self-confidence. At the same time, the friendships we built gave us a deeper and different perspective on China and its people than we had known before. These experiences were so powerful that we wanted to share them with other MIT students. We knew if other MIT students had the opportunity to define a project and then work with a team half-way around the world, they would experience as much personal growth as we did.



*Often we hear  
the four magic  
words—“the  
experience  
changed me.”*

The result of this desire to give other MIT students this opportunity for personal growth is MIT-CETI. With the support of MISTI, the Freeman Foundation, and corporate sponsors, MIT-CETI has progressed beyond our initial expectations. The one thing that makes us want to contribute to CETI year after year is the enthusiastic reaction we get from interns after they return from their experience in China. Often we hear the four magic words—“the experience changed me.”



*“Twenty-five students from the Massachusetts Institute of Technology, one of the United States’ finest universities, will be in China this summer to help high school students and teachers learn to use the Internet and the World Wide Web.”*

--United States  
Secretary of Commerce  
William M. Daley  
Inauguration of Beijing  
University’s MBA Program,  
June 29, 1998

*Secretary Daley, Senator Markey, President Clinton,  
ChangQing Zheng, and Fudan High School students.  
(Photo courtesy of the White House.)*

## The Clinton Visit

**P**resident Clinton visited China two weeks after he delivered an address to the 1998 MIT graduating class. Following up on President Jiang Zemin’s visit to the United States the previous year, President Clinton traveled to four cities in China: Xi’an, Beijing, Shanghai, and Guilin.

Many MIT interns also arrived in China around the same time. During the months before the trip, the State Department had also made several inquiries about MIT-related projects in China.

The MIT-CETI project demonstrated how United States companies and college students were collaborating with Chinese students and teachers to help promote new technologies such as the Internet. As one White House official said, “We like this project because it’s small but special.”

Robert Yung, member of the MIT-CETI Executive Board, promoted the program to Andrea Koppel of CNN and Sam Donaldson of ABC News, whom he had just met during a telemedicine event in Xi’an attended by the Secretary of State Madeline Albright and the Secretary of Commerce William Daley. He instructed engineers from Sun Microsystems in Shanghai to prepare video teleconferencing equipment and

servers to prepare for a possible visit.

However, the Chinese government was concerned that if the cameras sent back images of MIT students in high schools, the rest of the world might form false impressions of China: a primitive, evolving country being helped along by Americans.

An alternative was proposed — an Internet cafe event where the President, the Secretary of Commerce, Senator Markey of Massachusetts, and Chinese high school teachers and students would access the Internet.

ChangQing Zheng, a MIT sophomore in the Electrical Engineering and Computer Science Department attended the ten minute event. The officials surfed the web with the students and asked questions related to Internet access in China.

“At some point an interpreter from the U.S. Consulate suggested that we check out the NBA web site because Commerce Secretary Daley was a Chicago Bulls fan,” noted ChangQing. “While we were in the middle of browsing the NBA webpage, President Clinton and Secretary Daley filed in followed by a bunch of reporters....Secretary Daley sat down at my terminal while the President sat down at the terminal with the Fudan High School Teacher.”



# The First Lady's Visit to the No. 3 Girls' School

*"The school didn't know that we suspected Mrs. Clinton would be visiting. So I wanted them to confirm the visit to us. So I proposed a meeting in July, which I knew would be too late if the First Lady were to visit the school. If they wanted to do something related to the First Lady, I knew they would push for an earlier date. Surprisingly, the computer teacher told me that a certain "lady of very important status" was visiting the school and they wanted our help at an earlier date."*

Dan Hu  
June 15, 1998

In early June, we were informed that a "lady of very important status" would soon come to visit the No. 3 Girls' School in Shanghai. Although the name was not suggested directly, we had already guessed the person was First Lady Hillary Rodham Clinton. The timing of this individual's visit made it an easy conclusion to draw.

Since the school had asked us to help prepare the computer facilities for her visit, several of us including Dan Hu, Mingxi Fan, Lauren Fletcher, Christine Su, and

Andrew Nevins began working with the students in preparation for the visit. We spent several evenings in a small computer room brainstorming a list of what the students could do on the day the First Lady was to arrive.

The list included presentations, web surfing, graphic manipulations, and many other projects students could demonstrate in a very short amount of time. Surrounded by computers, scanners, projectors, digital cameras, we let our imaginations run wild.



Students from Shanghai No. 3 Girls School greet First Lady Hillary Rodham Clinton.  
(Photo courtesy of the White House.)

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*"The payoff for [the MIT-CETI effort] will be increased familiarity and greater confidence in dealings among the future leaders of both of our nations."*

-- David Miller,  
representing the Consulate  
General of the United States  
of America in Shanghai,  
July 19, 1997





PERSONAL EXPERIENCES

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*“Our overall experience in the MIT-CETI program can be summed up with one emphatic sentiment: awesome.... As we look back on how we were able to share our knowledge of technology and American culture with our students, how much we learned from them about Chinese pop culture, and how we left China with 30 new friends, we can proclaim with great confidence and pride that our mission was fulfilled.”*

Bryant McLaughlin, Hugo Liu  
The Middle School Attached to Xi’an  
Jiaotong University, 1998



# ONE WIRELESS DAY

Roger Hu



*As the world focused on Hong Kong's return to China on July 1, 1997, we felt that history had also been made only ten days later.*

*In 1997, Roger Hu, Ting Luo, and Mandy Mobley returned to the Number Two Secondary School located in Shanghai and connected the school to the Internet -- but through wireless technology.*

My team sought to provide a high-speed affordable link to connect the school to the Internet. Before then, access was limited to a single dial-up modem, which was slow and cumbersome. This limited the ability for the school to access the Internet effectively and quickly.

Vaughan Pratt, a Stanford University professor, and Barton Bruce, Vice President of the Cambridge Entrepreneurial Network, suggested that wireless technology was the best choice given the fact that the closest point of Internet access was at the local university, a mile away from the high school. After determining the expensive costs of wiring the school, we decided to experiment with wireless networking technology.

Using wireless networking technology meant installing antennas on the rooftops of two buildings. There had to be a clear line-of-sight between the antennas, which meant that there could be no trees and no buildings in the way. We often joked that we would bring chainsaws and dynamite if the circumstances deemed it necessary.

Usually, a group of specialized

engineers help resolve such issues. But as far we could tell, no wireless networking company had any major offices in Shanghai. Without any budget for paying for such services, our options seemed extremely limited.

I spent late hours at night with Jake Seid, co-founder of the MIT-CETI program and a fellow fraternity member, staring at small pictures of the school buildings available on the Internet. When we discovered that a track field spanned most of the area separating the university and the high school, we knew the line-of-sight respects were strong. Still, we wanted confirmation.

So my team turned to Huang Chao, a Number Two senior, and Lu Gang, an East China Normal University graduate student, to run around the rooftops and to answer our questions sent by e-mail. Can you see the university building from the high school building? Was wireless technology permitted in China? The questions seemed endless.

The exchange of e-mail was inefficient because it would sometimes take days before Chao and Gang responded. We guessed that it was because they had to spend so much time deciphering what we were asking. Imagine if your first language wasn't English and somebody started throwing questions laden with technical jargon at you!

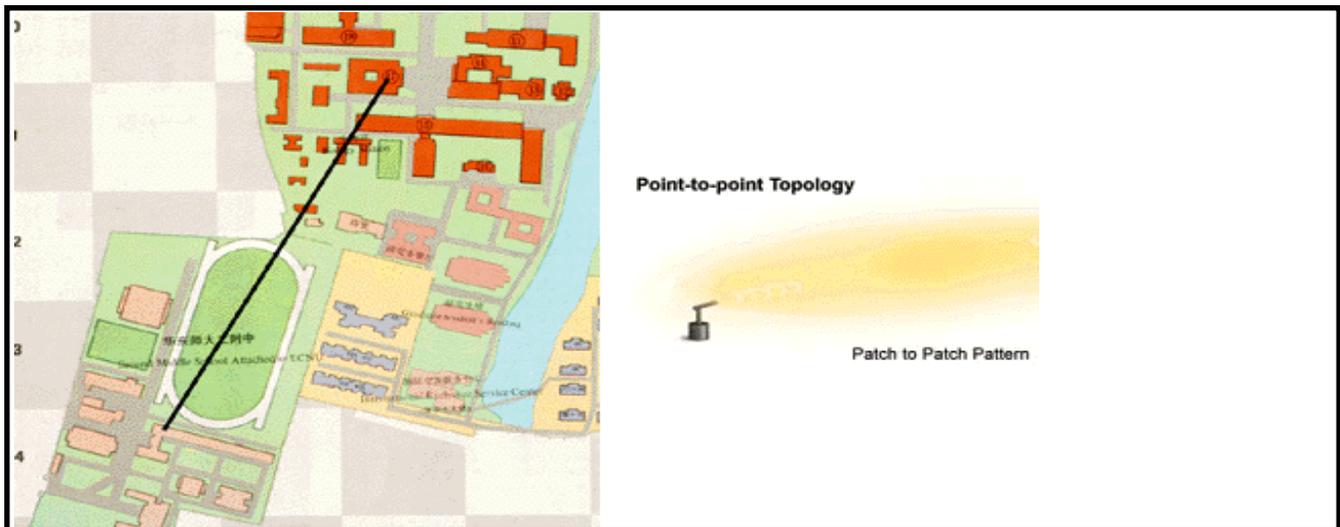
We started to ask our questions in simple sentences. The response time quickened, either because of our adjustment or their reading comprehension just improved. As we slowly gained more information about the school, the more confidence we gained that the wireless option was technically feasible.

## Proxim's support

We explored the Internet and the World Wide Web, trying to solicit interest from various wireless



*Huang Chao, a Number Two Secondary School senior, holding the antenna.*



technology companies. We found a Silicon Valley-based firm called Proxim. In addition to providing equipment, they were willing to send an engineer to fly into Shanghai to help with the installation.

Proxim had businesses in Korea and Japan, so they were familiar with shipping and export regulations. Thus, the equipment arrived in Shanghai in time for our arrival.

We finally had the equipment in our hands. Would we succeed?

### One Digital Day

This installation was by no means trivial. First, we needed to determine the ideal spot on the rooftops. Then, we would have to install water pipes to which the antennas could be latched. Finally, after the antennas were latched, we would have to run antenna cabling into the room.

During this time we were contacted by a photojournalist who was involved in a project entitled One Digital Day. This project, sponsored by Intel, sent one hundred of the world's top photojournalists around the globe to depict how the microprocessor was transforming the world.

Though we agreed to film ourselves on the roof installing the antennas onto the water pipes, we didn't realize how messy this proposition would become. The camera crew wanted to include Chinese students in the picture, so we

would have to make each of our students climb up to the roof. Twenty students from the high school climbed the ladder and made their way up to the roof followed by the camera crew hauling camera equipment with them.

Thankfully, all went well. Huang Chao, the high school senior who had helped answer our questions by e-mail months before our trip, took responsibility of the installation. As he stood on the ledge, peering down, he carefully latched the antenna onto the water pipe. July 11th was his birthday so we sang Happy Birthday to him while the camera crew filmed the whole event.

### Success

The wireless equipment contains a link diagnostic test to determine the strength of the link on a scale of one to five. On the first try, after we had installed and aligned the antennas, the equipment measured a

link integrity of five.

With the signal strength measured at the maximum intensity level, we empowered the school to access the Internet at a fraction of the cost of what they would had to pay if they wired their school. They could surf the World Wide Web and send e-mail just like many other schools connecting to the Internet. The link was also blazing fast; the telnet and Netscape connections to the outside world were more than impressive.

As the world focused on Hong Kong's return to China on July 1, 1997, we felt that history had also been made only ten days later. But although the public did not pay too much attention at the time, a year later, CNN and the United Airlines in-flight shows aired a segment about the One Digital Day and our wireless project.

July 11th, 1997, the magical day when the wireless link worked, will be a day we'll always remember.



Above: Diagram of the wireless link

Left: Xu Gang, an East China Normal University graduate student, aligning the antenna.

# MY JOURNEY

*Xiaomin Mou*



*Yet the next six weeks would prove that my students were truly my teachers.*

*Xiaomin Mou traveled to the Middle School of Xian Jiaotong University, along with Richard Li and James Montgomery. As a member of the lucky thirteen who went in 1997, she continues to mentor interns in preparation for their visits to China.*

As a 1997 MIT-CETI intern, I was part of a noble initiative to foster understanding between the American and Chinese cultures by bringing together their generation through technology.

Before I arrived at the Middle School of Xi'an Jiaotong University, however, I was nervous. Although I had been

in phone contact with Principal Guo, my team was still uncertain of her school's computer network capabilities. Would we put together a LAN quickly enough? In addition, the last time I had stepped on the soil of my homeland was ten years ago. Would I connect with my students?

Once at the school, my students erased all my anxieties with their warmth and eagerness. Some of them had never even touched a keyboard! I was so excited to teach them about

computers and the Internet. Yet the next six weeks would prove that my students were truly my teachers. I was not the only one with adventures to tell; their wonderful stories touched me and enabled me to see the world through their eyes. Our friendship helped me grow as an individual.

My team, which consisted of Richard Li, James Montgomery, and I were committed to our class. Our twenty five students were equally

dedicated. Our original plan was to teach from 8:30AM to 4:30 PM, but often stayed in the computer lab during



lunch so that our students could put the lessons to practice. The three of us would stay late into the night working on the network that we often had to climb the school fence after it had been locked. One morning, I found three students sound asleep in the lab and I realized that they had spent the night in the lab in order to fix the bug in their Java programs. I remember looking at the little cots they had set up with the wooden chairs and crying because I was so inspired by their spirit of learning. I knew then that our project had already accomplished its goal.

From acting out a funny story while eating watermelons at the fruit vendors to slipping off the balance beam and giggling as we climbed back together to staying up past 4AM to share our American and Chinese stories of growing up, we became real friends. When I caught the stomach flu, my students brought me fresh soy



*Xiaomin Mou and James Montgomery show off the Internet to their students.*

milk, cut my favorite fruits and a bowl of Mianpi, a Xi'an specialty noodle I had loved. Richard, with his American sarcasm so different from the Chinese humor, would often send them into hysterical laughter while they helped him with laundry. On the last day of class, James surprised everyone. He wrote all the Chinese characters he had learned on the chalkboard. The All-American guy who could not speak a word of Chinese six weeks before had written the most beautiful characters I had ever seen. I was moved to tears and I heard our class sob. I will always treasure the special gift they presented to each of us: an exquisite piece of jade that was meant to protect us forever. I will always remember the warm big hug from Principal Guo as she said, "My dear friend, I will wait for your return next summer!"

Back at MIT, when I read a lovely Chinese New Year's greeting from her, I thought about how the MIT-CETI experience affected me. It has opened me to the pleasure of connecting with beautiful strangers and learning their stories and seeing through their eyes. It has broadened my horizons to care about something other than

engineering and the pure sciences. I had learned to appreciate the beauty of people, their heritage, their dreams and most of all, the special way they make up the longitudes and latitudes of my world.

Today, as I mentor future MIT-CETI interns to prepare them for their exciting adventure, I smile to myself. They are about to step into something wonderful.



*Richard Li explains the Java programming language to several attentive students.*

<http://202.121.0.194>

Mingxi Fan



***“The friendships between SES and you (MIT-CETI) will last forever.”***

--Yun Zhao Shi,  
Principal of the  
Shanghai Experimental  
School

*The title may sound like some random web site, but this URL represents the heart of one individual, Mingxi Fan. Thanks to funding secured from the Shanghai Education Commission, equipment including routers and switches provided by Cisco Systems and hubs and Ethernet cards from Accton Technology, Mingxi would eventually help his alma mater, the Shanghai Experimental School, connect to the Internet.*

Ever since 1996, the use of the Internet has grown rapidly among coastal cities of China. Many homes and businesses in major cities such as Beijing and Shanghai are connected or in the process of being connected to the Internet. Secondary educational institutions, including middle and high schools are all trying to make Internet resources available for teaching and communication. By 1998, some of these schools that have a strong academic reputation and funding are already on-line, but the majority of schools are still waiting to get online, having applied to the bureaucracy for a connection.

Shanghai Experimental School (SES) was one of the schools in Shanghai that are on the long waiting list. The school was told by the Education Commissions that they would not be connected to the Internet for at least one to two years because of insufficient funds and resources in Shanghai.

My initial goal was to have all the necessary Internet equipment

ready at SES by the time our team would arrive in June. The preparation involved completing several difficult tasks over long distance phone:

1. Choosing an Internet connection scheme (e.g. fiber, wireless, DDN) that is best suited for SES.

2. Assisting SES in getting approval and funds from the Shanghai Education Commission for a new computer lab and Local Area Network equipment.

3. Work with SES to find an affordable yet reliable ISP in Shanghai.

I started by seeking advice about network connection schemes from several known network experts in Shanghai. After persistent efforts, I finally had the opportunity to talk to them and thoroughly inquired about the status of Internet connection schemes in Shanghai. Most of them recommended DDN (digital data network) to be used as the initial SES Internet connection.

In order to secure project funding, I personally contacted the Shanghai Educational Commission. After being transferred many times, I finally managed to find the technical director of their educational network division. After hours of conversation, she was moved by the enthusiasm and goal of MIT-CETI and agreed to help us in getting SES connected to the Internet. Just two weeks after the school sent their proposal to the Education Commission, the school was granted funding to purchase new computers and network equipment.

The progress seemed to be well underway until SES told me that they still needed funds to purchase several important pieces of equipment, including a powerful server, routers, switches and cables. I quickly moved to solve this problem. I first asked SES to submit another proposal to get more funding from educational commission. I also worked closely with Roger Hu to explore the



Andrew Nevins, Martin Mbaya, Mingxi Fan, and Christine Su.



*Shanghai Experimental School students working on their webpages.*

a variety of impressive, creative, and in-depth personal and school web pages, we left China and completed our 6-week MIT-CETI session at SES. Before we left, SES held a farewell party for us, and we exchanged gifts, addresses, and tears. The principal accompanied us to the airport the next day. Her remarks best concluded our trip, "The friendships between SES and you (MIT-CETI) will last forever."

possibility of corporate sponsorship. Soon after, several firms including Accton, Cisco, Kodak, and Sun Microsystems generously offered their support.

Along with my newly acquainted teammates, I arrived in Shanghai on June 18, 1998. Our job from the start was not easy. On the teaching perspective, Lauren Fletcher and Christine Su had to communicate frequently with the computer teachers and students there. They managed exceptionally well, and Lauren, who, even with language barriers, actively and quickly absorbed common phrases in Chinese and soon made many friends among the students. She personally told us that this was one of the most exciting learning experiences for her. Christine developed a very good relationship with both the teachers and students as well. When we started teaching after a week of preparation, the seventy participating SES students and teachers were extremely enthusiastic.

Despite the lack of resources and enthusiasm from many government and private agency personnel, many of the top level officials were very cooperative. One official told me the reason for their support; "Although we appreciate you helping Shanghai schools setting up internet, we do not need to place your task on top of our list just for that reason. Many other schools in Shanghai are also in the process of

connecting campus network right now. What really touched us, though, is how enthusiastically and diligently that you, and probably other MIT-CETI students, are carrying out the project. We really appreciate the enthusiasm and hard work exhibited by your team."

Finally, three and half weeks into the summer CETI session, the entire SES computer cluster was connected to the Internet with the help of Shanghai Jiao Tong University and China Education Resource Network regional branch in Shanghai. As I saw the excitement shining in the eyes of SES students who were surfing the Internet for the first time, I felt that this was probably the happiest moment in my life.

Two days after the Open House, during which the students presented



*Christine Su and Lauren Fletcher teach their students about the Internet.*

# WHY MIT-CETI?

*Martin Mbaya*



***MIT-CETI exceeded many expectations I had set and introduced me to many new and wonderful experiences.***

*Martin Mbaya reflects on his MIT-CETI experience.*

*Martin Mbaya, based at the Fudan High School in Shanghai, took part in the program the summer of 1998 along with teammates Andrew Nevins and ChangQing Zheng.*

Teaching for six weeks about the Internet to Chinese high school students was not exactly how I had envisioned spending the summer of my sophomore year. I was a mechanical engineer, almost hopeless at handling computer hardware and having minimal experience in using the web. Worst of all, my Chinese vocabulary was limited to a few salutations whose pronunciation I was not even sure of. Yet, after the persistent urging of some friends, I applied for the MIT-CETI program. Looking back now with the benefit of hindsight, I don't think I would have opted for anything different.

The desire to be a part of MIT-CETI may have been kindled very early in my MIT stay. I still recall the enthusiasm when Dan Hu (one of the current co-directors of MIT-CETI) spoke of his involvement in the program a year before my trip. Small talk concerning all the preparations he had to undertake; his interview by "The Tech", MIT's student newspaper; and the excitement he radiated during the taxi ride to Logan airport on the day he left for China were all details that left their indelible mark on me. Another latent issue was the fact that some close friends at my living group,

Student House, had already participated in the program or were planning to do so. Since we shared a lot in common, this certainly played a part in arousing my interest. I knew at the back of my mind that I would soon be China bound but exactly when was still unclear.

Eventually it all narrowed down to a low Grade Point Average at the end of the fall semester of my sophomore year. This barred me from clinching a position in the Engineering Internship Program run out of MIT's School of Engineering but in the same stroke ensured I concentrated all my efforts on becoming a part of MIT-CETI. Unintentionally I was setting myself to spend a summer doing things I held dear to my heart. In the words of the famous poet Robert Frost, it felt like I was travelling down "the road less travelled." Little did I know what pleasant rewards awaited me further down.

MIT-CETI exceeded many expectations I had set and introduced me to many new and wonderful experiences. There were definitely several trying moments but, taken in stride, these often turned out to be powerful learning experiences for me. All said and done, however, I was able to achieve a lot of what I had set out to do. One of my goals was to improve the little computing skills I had acquired so far at MIT. Fortunately, Fudan High School already had good computing facilities. From interacting with Andrew and ChangQing, I gained a lot of insight concerning computer networking and the makeup of both personal and networked computers. The constant use of web browsers and digital cameras improved my understanding of software applications. Most significantly however, I came to appreciate the impact of the Internet at various levels of society and how





the government and educational institutions were managing and utilizing this resource.

I was intrigued by what I learned from observing and participating in the Chinese educational community. The most rewarding aspect was the daily interaction with students, something that was only slightly hampered by the language and cultural barrier posed by my background. On a wider scope, it was interesting to compare the high school and university experience between China, America, and my native country, Kenya. One of my most fulfilling experiences transpired one morning at the High School attached to Tsinghua University in Beijing. Along with other MIT-CETI interns, I was able to share about Kenya, Africa and my experience studying in the culturally diverse city of Boston.

On a larger scale, I found in the MIT-CETI internship a chance to develop my teamwork and leadership skills. Considering the diverse backgrounds of my fellow team members at Fudan High School (Andrew was American, ChangQing was Chinese and I was African) what I learned was extremely valuable. Thanks to the open-ended approach the program adopts in getting the job done, I learned a great deal about project management and working in a foreign setting with local personnel. I came out of MIT-CETI a much more

effective administrator and ready to take on any challenge in my way.

While in China, I had the opportunity to make a lot of important contacts. Most arose from our work at the high school but there were also others that I had not even anticipated. These included several Africans whom I found studying at the local universities and several Christians from the local churches. Equally insightful were the visits to some of the homes of the local families and members of the expatriate community from countries like the UK, the USA, and Australia.

The icing on the cake was undoubtedly the group trips we made to Beijing and various parts of Shanghai and its satellite towns. With each trip I gained more insight into the lives of the Chinese people and got to enjoy many tourist sites. Exploring the vast summer palace at dusk, trekking on the Great Wall for hours, dining on sumptuous Shanghainese dishes, taking in the view of the city from the top of the soaring Shanghai TV tower, cruising rivers and lakes on motorized boats, the list was endless. China was certainly a transforming experience.

Happily, my MIT-CETI experience still continues even now that I am back at MIT. My role, like that of other past interns is mostly a

supportive one. So far I have worked as a publicity officer and once in a while shared informal advice with other members regarding administrative issues. It is really fulfilling to witness MIT-CETI's growth and the sprouting of similar initiatives both at MIT and in other campuses.

The six weeks I spent in China teaching technology has had a great impact on my life. The insight I gained from working in China hopefully marks the beginning of a greater involvement with the Asian region. The computing, teaching skills, and administration skills I gained will be useful tools in any environment where I eventually end up working. Many of the friendships I formed and strengthened will be jewels that last for a lifetime. But most importantly, the chance to be part of an experience as unique as MIT-CETI is a great inspiration to get her achievements replicated in Africa.



*Shan Wang, Andrew Nevins, Matt Karau, and Martin Mbaya enjoy a tea ceremony in Hangzhou.*



...memories

## PROPOSAL FOR SECRETARY DALEY'S HIGH SCHOOL VISIT IN SHANGHAI

**Concept:** Secretary Daley would visit a high school that has been connected to the Internet of the MIT-China Educational Technology Initiative (MIT-CETI), a voluntary organization funded by the MIT-International Science and Technology Initiative and corporate sponsors.

**Objective:** The purpose of the visit would be to highlight how U.S. companies and colleges are working with Chinese students and teachers to help promote access to new technologies, such as the Internet, in order to enhance education and economic development, and promote international cooperation.

**Scenario:** Upon arrival at the school, the Secretary could be greeted by the principal and the classroom. There, the Secretary could see a demonstration by the teacher on how computers and the Internet are being integrated into the daily learning environment. Following the demonstration, representatives from MIT-CETI, teachers, and participating corporate partners could join the Secretary in the classroom, could make brief remarks on the important benefits of Internet access, including teaching and learning. Following his remarks, the Secretary could be escorted to another room, where he would lead an informal exchange with the program participants to learn more about their plans to expand the initiative throughout China.

**Background:** This summer, 24 MIT students are in China as part of the MIT-China Educational Technology Initiative (MIT-CETI). These students are going to high schools throughout China in order to help Chinese high school students and teachers to learn the use of the World Wide Web and Internet as a teaching tool and medium for international communication.

The MIT-CETI started in summer, 1996, when two MIT graduate students traveled to Shanghai, setting up the first Web server for a high school in China. Their goal was to foster a better understanding of the Chinese people and culture while improving technology in Chinese high schools. In 1997, thirteen MIT undergraduates traveled to five high schools throughout Shanghai, Beijing and Xian, where they accomplished the connection of a high school to the Internet using wireless technology, organized the China NetDay effort with Sun Microsystems, and hosted conferences in Shanghai, Beijing, and Xian to bring together students, teachers, government officials, and corporate sponsors to address high school education and the use of the Internet.

This year's corporate sponsors are: Anixter Inc., Cisco Systems, Eastman Kodak Company, Microsoft, and Sun Microsystems.

Prepared by: Elizabeth Echols, NTIA  
Roanne Robinson, NTIA