

Carnegie Mellon University
Information Networking Institute

the network

MAGAZINE



SUMMER 26

ini

table

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director's letter

Dear alumni, friends and collaborators —

Another summer is coming to a close, and with it, I'm proud to share our 2025–26 INI magazine, *The Network*.

In these pages, you'll read about highlights from the past academic year, including the INI's role as Regional Host for one of the most important cybersecurity conferences in the country. From our top-winning hackathon team to our innovative faculty, the INI continues to lead the way.

This summer, I traveled to Athens, Greece, to reconnect with the many alumni and faculty from our Athens MSIN program (you can see our signature goofy group photo on the left page). It was a reminder of the remarkable legacy we have built together — and all the exciting things that we continue to build.

As we look ahead, I am reflecting on the dedication of this community, now over 3,000 strong. I hope you will visit us at the INI during the upcoming year, where you will get to see our beautifully renovated space (take a look at the pictures below). We would love to host you.

Thank you for all of your contributions, whether you've mentored our students, sponsored a Practicum project, brought insights from industry or represented the INI out in the world. Your leadership and care for this community inspires me every day — you are truly the heart of our work.

DR. DENA HARITOS TSAMITIS

Director, INI

Barbara Lazarus Professor in Information Networking

Founding Director, Education, Training and Outreach, Cylab

INI Director Delivers Keynote at CAE Cybersecurity Symposium

BY EVAN LYBRAND

The Information Networking Institute (INI) was the regional host for the annual Center of Academic Excellence in Cybersecurity (CAE) Community Symposium and partnered with the National Cryptologic University National CAE Program Management Office to host it in downtown Pittsburgh from April 28 to 30.

The three-day event brought together administration and faculty members from across the National Security Agency (NSA) CAE community for workshops, presentations and networking. Over 700 attendees gathered at the Wyndham Grand in Pittsburgh, Pennsylvania, to “get involved” — the theme of this year’s symposium.

On Tuesday, April 28, INI Director Dr. Dena Haritos Tsamitis gave a keynote address. “We are a network of neighbors — faculty, staff, administrators and government leaders — working together to ensure that our digital neighborhood remains safe,” she said. “We are not competing against each other. We are strengthening the collective defense of our nation — and expanding our capacity to act proactively against emerging threats.”

Under Dr. Haritos Tsamitis, the INI sustains Carnegie Mellon’s three designations as a CAE school: Cyber Defense (CAE-CD) and Cyber Operations (CAE-CO), which certify the INI’s Master of Science in Information Security, and Cyber Research (CAE-R), which certifies several Ph.D. programs across the College of Engineering and School of Computer Science and allows Carnegie Mellon University (CMU) faculty to participate in competitive NSF grant opportunities.

The INI also shared recorded remarks from Pennsylvania Senator Dave McCormick, who emphasized the importance of the CAE community’s work to national security.

Attendees took part in presentations on a wide range of subjects, with a particular focus on partnerships between the Department of War (DoW) and higher education institutions working to develop a robust cybersecurity workforce at scale. Attendees also compared curricular developments on how to integrate AI technologies and engineering into cybersecurity programs. The symposium concluded with presentations on cybersecurity education and global threats.



INI faculty, left to right: Assistant Teaching Professor Dr. Hanan Hibshi, Director Dr. Dena Haritos Tsamitis, Associate Director and Assistant Teaching Professor Dr. Michael Mattarock and Associate Teaching Professor Dr. Patrick Tague



Dr. Dena Haritos Tsamitis giving the keynote address at the CAE in Cybersecurity Community Symposium

INI Cybersecurity Achievements

On April 29, the INI hosted an intimate reception on the CMU campus for members of the CAE community to connect with Carnegie Mellon and INI faculty.

To round out the week, on Friday, May 1, INI Associate Director Dr. Michael Mattarock attended the DoW Cyber Academic Engagement Office’s ASCEND symposium. This event highlighted finalist teams who competed in the Aligned Skills Curriculum and Experiential Network Design (ASCEND) Initiative, designed to produce scalable education models for cybersecurity workforce development.

“The ASCEND showcase was not simply a competition, but a catalyst, one that begins to close the nation’s cybersecurity gap by transforming how we educate, scale and deploy talent,” said Dr. Mattarock.

Since the launch of the Logic Theorist in 1956 and the CERT Coordination Center (the first federally funded emergency response team) in 1988, Carnegie Mellon has been recognized as a birthplace of AI and modern cybersecurity. That leadership has advanced over time, from early engagement with the newly formed Department of Homeland Security to the ongoing contributions of the Software Engineering Institute and faculty across disciplines. ■

- › In 2025, INI Director Dr. Dena Haritos Tsamitis secured a **\$1 million** National Science Foundation (NSF) award to renew the CyberCorps Scholarship for Service (SFS) program.
- › The M.S. in Information Security (MSIS) program was named **Best Master's in Cybersecurity** by Fortune Education in 2025.
- › **The first-of-its-kind program**, M.S. in Artificial Intelligence Engineering - Information Security (MSAIE-IS), was launched in 2022.
- › CMU holds **three designations** from the National Center for Academic Excellence in Cybersecurity (NCAE-C): Cyber Research, Cyber Operations and Cyber Defense.

Celebrating the INI Class of 2026 and the Future Ahead

BY EVAN LYBRAND



Dr. Dena Haritos Tsamitis



INI and CMU faculty

On Sunday, May 10, the INI held its annual Diploma Ceremony during CMU Commencement weekend. This year, 197 students joined a bustling and innovative network of over 3,000 alumni spanning the globe. 127 were in attendance at Rodef Shalom to be recognized for their momentous accomplishment by their peers, family and INI faculty and staff.

Before the ceremony, INI Director Dr. Haritos Tsamitis called the mothers to the stage in order to recognize the impact they have had. “Without them, none of this would be possible,” Dr. Haritos Tsamitis said as the crowd applauded.



Keynote speaker Aditi Pendharkar (MSIN 2009)

The world looks very different from when the 36th class began their program, a sentiment that was echoed by Dr. Haritos Tsamitis.

“Artificial intelligence has changed this field at an extraordinary pace,” she said. “Systems once designed primarily to automate tasks are now reshaping how humans create, solve problems and collaborate, but even in the middle of all this change, some things matter just as much as they always have. Your character. Your judgment. Your ability to lead through uncertainty.”

Dr. Haritos Tsamitis highlighted the importance of human decision making as technology continues to develop and change.



Graduates

The themes of change and leading with humanity continued throughout the ceremony with Keynote Speaker Aditi Pendharkar (MSIN 2009). After sharing a touching memory with Dr. Haritos Tsamitis, Pendharkar took the podium to inspire graduates with her message.

“You are probably the last generation that thought coding was the hard part,” said Pendharkar. “It isn’t anymore — and that’s not a loss. It’s a liberation.”



Nishant Puri (MSIT-IS)



Left to right: Ananya Mallekatte Basavarajappa (MSIN), Ryan Kim (MSIS), Inzamam Sayyed (MSIS) and Takudzwa Tarutira (MSIS)



Outstanding Student Service Teaching Assistant
Shyamal Vadera, MSIN
Nominator: David Eckhardt



Outstanding Student Service Research Assistant
Neelesh Bisht, MSIN
Nominator: Min Xu



INI Leadership Award
Logan Shea O'Brien, MSIS
Nominators: Hanan Hibshi and Taha Khan



Innocent Habiyaemya Memorial Award
Danielle Wicklund, MSAIE-IS
Nominators: Pedro Bustamante

Dr. Dena Haritos Tsamitis (left) with Aditi Pendharkar



“ You’re no longer just students — you’re the engineers of our shared future. Don’t be intimidated by change. INI alumni have led through shifts like this before, often without a roadmap. Now it’s your turn.”

“We are in the middle of a once-in-a-lifetime shift. Right now, when building becomes easier, your focus shifts to bigger questions: What should we build? Why should it exist?”

To conclude her speech, Pendharkar shared some final advice. “Always be building — and understand that what you build shapes how the world behaves,” she said. “Your real edge is being human — protect it with all your passion. Choose what you optimize for, because AI will take that choice and scale it everywhere.”

She concluded her speech with a quote from poet Sir Muhammad Iqbal: “You are an eagle — your purpose is to soar; there are many more skies ahead of you.” ■



Nigar Najafli (MSIS) with family



Left to right: Nicolas Derichsweler (MSIS), Nicole Villavicencio Garduño (MSAIE-IS), Gabrielle Calderon (MSIS) and Matt Ung (MSIS)

Left: A group of graduates

Center: Dr. Quinn Jacobson, Dr. Cynthia Kuo, Anthony Shen (MSMITE) and Dr. Patrick Tague

Right: Inzamam Sayyed (MSIS) and Aashay Wadkar (MSIT-IS)



CHARTING VICTORY: INI TEAMS TRIUMPH IN MITRE ECTF

BY EVAN LYBRAND



2019: Formation

The team of INI students advised by Dr. Martin Carlisle (INI) takes second place in the MITRE eCTF.

2019

2021

2021: The Return

After the pandemic, Henry Howland, then an MSIS student, reformed the team with Dr. Hanan Hibshi (INI) and Dr. Maverick Woo (CyLab).

2022

2022: The Legacy Begins

The team begins their five-year streak with two new advisors: Dr. Patrick Tague (INI) and Dr. Anthony Rowe (ECE.).



2023

2023: High Rollers

In their second win in a row, the team scored 10,000 more points than the second-place team.

2024

2024: Rapid Expansion

CMU continues its winning streak with a team consisting of 13 students including five INI students.

2025

2025: Making History

The team becomes the first in the history of MITRE eCTF to have four consecutive wins in the competition.

2026

2026: The Legacy Continues

With an unprecedented fifth win, the team remains the winningest team in MITRE eCTF history. They were co-advised by Dr. Tague and Dr. Hibshi along with Dr. Nicolas Christin (S3D).

Portrait of the MS36 class



M.S. IN ARTIFICIAL INTELLIGENCE ENGINEERING - INFORMATION SECURITY (MSAIE-IS)

Yuxiao Li: MACHA: An Efficient Multi-Agent Framework for Comprehensive Hallucination Assessment

Zeyang Zhang: Cross-Modal Learning Through Hierarchical Quantized Embeddings

M.S. IN INFORMATION TECHNOLOGY - INFORMATION SECURITY (MSIT-IS)

Jihu Hwang: Securing Retrieval-Augmented Generation (RAG) with Trusted Execution Environments: A Security-Utility Trade-off Analysis

M.S. IN MOBILE AND IOT ENGINEERING (MSMITE)

Qingzheng Wang: Towards Robust Spoken Language Identification

M.S. IN INFORMATION NETWORKING (MSIN)

Xingci Gu: Develop an RPG on Unity3D for Release on Steam

Zepeng Zhao: A Persistent Megakernal Architecture for Multi-GPU LLM Interference

M.S. IN INFORMATION SECURITY (MSIS)

Logan O'Brien: Vulnerable by Design: Educational Smart Contracts for Teaching Blockchain Security

Matthew Ung: An Exploratory ML-Assisted Approach to Deobfuscating Compiled Executables



INTERNSHIPS

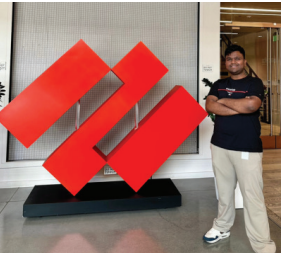


Ananya Mallekatta Basavarajappa
MSIN
Cisco

I worked on a project that involved developing a traffic path visualization tool for Cisco Secure Service Edge (SSE), which secures connections globally. The tool compares the expected path of network traffic against the actual path taken based on packet captures, helping engineers quickly pinpoint disruptions in traffic flow. This was particularly exciting because it gave me visibility into the entire Cisco SSE architecture and allowed me to contribute to infrastructure that impacts users worldwide.

Gavin Liao
MSMITE
Meta

I got to experience what shipping products and working in the industry feels like. Everything is moving at a high pace while everyone is simultaneously working together, even in different teams.



Samuel Jonathan Dinesh
MSIT-IS
Palo Alto Networks

I gained a lot of insight into how AI and Large Language Model (LLM) applications are being used in industry. Each week, I worked on a new problem in a different domain, which helped me serve as a more well-rounded engineer. I learned new technologies while adapting quickly to challenges, and I gained a strong understanding of industry practices for developing code within a large organization.



Nicole Villavicencio Garduño
MSAIE-IS
Los Alamos National Laboratory

The most exciting part was realizing that research is something I want to continue working on. I had never been on a serious research project and being able to see what the day-to-day life of a researcher can look like helped me envision what I want my future to be.

INI 2026 GRADS

MSIN: 80 MSIT-IS: 26
MSIS: 39 MSMITE: 31
MSAIE-IS: 21

Conferences, Competitions

and Connections

FROM PRESENTING THEIR WORK AT INDUSTRY CONFERENCES TO PLACING FIRST IN MAJOR NATIONAL HACKATHONS, INI STUDENTS STAY ENGAGED. HERE A FEW HIGHLIGHTS FROM THE PAST YEAR.

DEF CON CTF

For the fourth year in a row, the premier CMU hacking team, Plaid Parliament of Pwning (PPP), claimed the top spot in the 2025 DEF CON Capture-the-Flag (CTF) competition. This marks their ninth victory in 13 years. INI students and alumni have been prominent members of PPP and have been integral to the team's success throughout the years.



01

WICYS

INI students, staff and alumni attended this year's Women in Cybersecurity (WiCyS) conference in Washington, D.C. As a long-time sponsor and participant, the INI continues to sponsor students to attend and engage the broader research and practitioner community. This year, two INI students were sponsored to attend the event: MSIS students Nargiz Heybatova (above) and Shreya Savadatti.

Also in attendance this year were a number of INI alumni, including Chinomso Ashiogwu and Neha Gautam (both MSIT-IS graduates), and MSIS graduates Hashika Kalisetty and Maansi Tyagi.



03

EWF

Each year, the INI selects an incoming student to be the EWF-INI Fellow. Abby Farrell, an MSIS student, was chosen to represent the INI for the 37th class. As part of the Fellowship, Farrell attended the EWF conference in Denver, Colorado, along with INI Director Dr. Haritos Tsamitis (pictured right). The INI's partnership with EWF dates back to 2005, when it was created to establish opportunities for INI students to be mentored by EWF's membership of women leaders across security, risk management and privacy.



02

04

GOOGLE TECH TREK

Thanks to a collaboration with INI alum and Googler Evan Wright, 2025 marks the second year that INI students visited the Google offices in Pittsburgh. Students heard from a panel of team members from across Google departments who shared insights and advice on the current state of the technology field and life as a Googler. After the panel discussion, attendees had the chance to ask questions and connect with panelists.



05

RSA

For 35 years, the RSA Conference has been one of the most significant events for the global cybersecurity community. It is an opportunity for INI students to learn about critical topics in cybersecurity, connect with practitioners and widen their networks. The INI has held a leading role in the RSAC Scholarship since it launched and sends exceptional INI students annually.

This year, Logan O'Brien (left) presented a poster on his curriculum to teach students how to better keep these new technologies secure. Jihu Hwang (right) compared baseline configurations of TEE-enabled RAG systems with different levels and types of security.



06

VISIT FROM AN IBM LEADER

IBM Field Chief Technology Officer (CTO) Justin Blackstone met with faculty, staff and students during his visit to the INI. Blackstone gave a guest lecture for students in Associate Director Dr. Mattarock's 14-817: Cyber Risk Modeling class. During his lecture, Blackstone focused on the frameworks and tools IBM uses to evaluate cyber risk across the organization and shared new techniques his team is researching to improve protective measures. He also held a career talk on the INI student floor to share his experience at IBM and answer questions.

Rising Leaders in Modern Engineering

BY EVAN LYBRAND

PRACTICUM SHOWCASE

CELEBRATING CMU-SV STUDENT SUCCESSES

On Wednesday, December 3, 2025, students at Carnegie Mellon University in Silicon Valley (CMU-SV) celebrated the completion of their INI **Practicum projects**. The Practicum Showcase and Networking Reception is held at CMU-SV after students conclude a semester-long project sponsored by major companies, government agencies, nonprofits and startups from across the country.

Practicum is a key feature of the MSIT-IS and MSMITE bicoastal degrees that integrates the knowledge and skills students have built through coursework with an opportunity to contribute to real-world solutions.

During the Fall semester, students worked closely with professionals on complex problems. Projects from this past year included



developing an interactive platform to help users explore and interpret economic data, conducting simulated cyberattacks for major cities, improving programming libraries and developing AI assistants. ■

THANK YOU, 2025 PROJECT SPONSORS!

- › 99P Labs/Honda Research Institute
- › Amazon Web Services
- › City of San Jose
- › Clearview Federal Credit Union
- › Federal Reserve Bank of St. Louis
- › Groq
- › Heinz College of Information Systems and Public Policy
- › Itanta Analytics
- › Post Road Foundation



Left to right: Chenxi Zhang (MSMITE 2022) with MSMITE graduates Yuyang Liu (2026), Gavin Liao (2025) and Ting Yun Chan (2025) at the Cloudflare office



Left to right: Wencheng Zhang (MSMITE 2026), Jerry Zhou (MSMITE 2026), Yuzhe Guo (MSIN 2022) and Yiming Yin (MSMITE 2025)



Left to right: Abisheik Ganesan (MSIS 2017), Winnie Pagar (MSIT-IS 2025) and Harshit Mashru (MSIT-IS 2025)

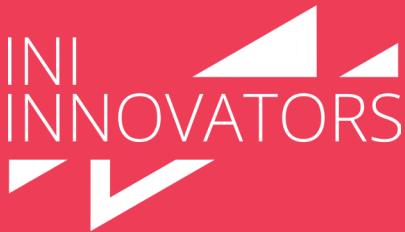
ON-SITE INSIGHTS

BUILDING A NETWORK WITH SILICON VALLEY ALUMNI THROUGH BAY AREA SITE VISITS

On-site Insights is an initiative to strengthen the bond between local alumni and INI students at CMU Silicon Valley. Through site visits to alumni working in the Bay Area, students learned about the day-to-day experience of working in major organizations and connect with the broader INI community.



Left to right: MSMITE 2026 graduates Anthony Shen, Julia Liu and Bear Xiong



Sponsor a Practicum Project



Host an On-site Insights

Please register here by Friday, August 21, 2026

Located in the Bay Area?

- › Help students connect with the Silicon Valley community
- › Network with current students and share your experience in industry to inspire and educate the next generation.

INI Innovators Speakers Series

AUTOMATED REASONING AT AWS

BY EVAN LYBRAND



Dr. Rahul Kumar speaking with CMU students about AWS’s advancements in automated reasoning.

AWS has sponsored nine Practicum projects.

- › **2024:** Four teams focused on verifying the Rust standard library.
- › **2025:** Five teams focused on improving efficient code reasoning and building on the verification projects from 2024.

Amazon Web Services (AWS) Senior Applied Science Manager Dr. Rahul Kumar headlined the first **INI Innovators** Speakers Series event this February. Traveling from Seattle, he spoke to a packed room of CMU students about how AWS has been investing in automated reasoning technology.

“Automated reasoning provides you the guardrails and the necessary theories allowing for the detection of hallucinations [in Large Language Models],” said Kumar. “In some cases, [automated reasoning] automatically fixes them for you.”

AWS is one of the first INI Innovators, an expansion on the prior Practicum sponsorship that includes a range of benefits, including unlimited resume books, priority on Practicum projects and the opportunity to give a talk on the CMU campus.

In 2024, Kumar worked with INI students to verify the safety of the programming language Rust. “It’s a great story,” he said. “I met an INI student in 2024 who was having an issue using one of our tools to do a proof for a piece of code. This student reached out to me, and we tried to work through a problem.

“Eventually, we successfully helped solve the problem, and I was highly impressed by the drive and passion she had. We ended up meeting for lunch, and she mentioned Practicum. I thought that was a great way for AWS and myself to engage with bright and talented students.”

The success of the initial AWS Practicum projects was enough for Kumar and AWS to return in 2025 and expand their scope. “Verifying the Rust Standard Library is by no means an easy task,” said Kumar “However, I met these students who had never learned Rust and, within three weeks, were making proofs and doing hard math. It was very edifying to be a part of that.” ■

Innovation Through Competition



QUINN JACOBSON'S SPECIAL TOPICS COURSE

By Evan Lybrand

Back for a second year, a special topics course takes INI students through the history of entrepreneurship and innovation.

Professor of the Practice Dr. Quinn Jacobson’s 14-693 Special Topics: Insights into Technology Innovation Through Competition shares real-world case studies of how the technologies students learn about today came to be.

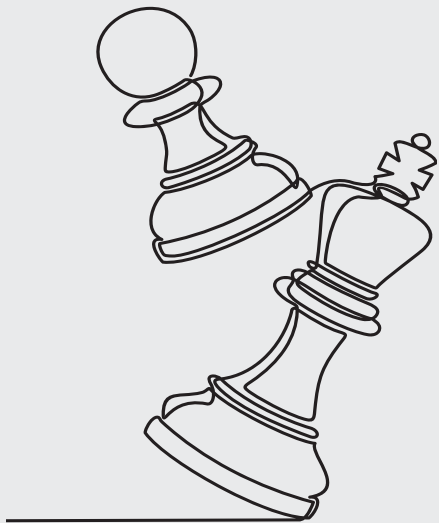
“I’m fascinated by the stories of how we got here,” said Jacobson. “I take the class from the early [days of] industry on the hardware side — we go all the way back to the ‘40s with early computers — to today. I was only [involved] in the latter part of that [evolution] myself, however, I have known some of the people who were there.”

Jacobson is a member of INI faculty located at CMU-SV and co-leads both INI Practicum and the Technical Entrepreneur Coaching Hub (TECH) program. He brings over 25 years of experience working in major tech companies and startups to this course.

Throughout the course, Jacobson brings in speakers who played a major role in shaping the technology of

today such as a technical lead from FireWire. For Jacobson, it’s important to learn from the winners and the losers when technologies compete.

“USB won,” he said, “but looking at it from someone who was there and designed one of the alternatives, you see there were a lot of things they actually did better than USB. I think it’s important for people starting their career to understand why one project



is successful and the other is not.”

That lesson is a core part of what Jacobson hopes students learn.



I want students to appreciate that we inherited this body of work. It didn’t just appear, and we add our little bit on top of it.”

“We have lots of celebrated failures, projects that — at the time — failed, but turned out to be very influential. We have people who were part of a ‘failure’ who are then celebrated because their work was so important to later success.”

Iteration is a consistent part of the story of technology. When recalling the release of the iPhone, Jacobson highlighted the fact that the device as we know it was not the first phone that Apple made, nor was it the only one being developed.

“I want students to appreciate that we inherited this body of work,” said Jacobson. “It didn’t just appear, and we add our little bit on top of it. When we understand better how we got here, you get this appreciation that this industry has all these great legacies and we’re building upon them.” ■

Guiding Tomorrow's Cyber Defenders

MEET TAHA KHAN

BY EVAN LYBRAND



Associate Teaching Professor Dr. Taha Khan is the latest addition to the INI faculty, having just completed his first academic year at Carnegie Mellon. Drawing from his interest in cybercrime, usable security and online censorship, Khan is thrilled to be guiding the next generation of cybersecurity experts through courses that build fundamental knowledge, critical thinking and problem-solving.

Could you tell us a little about your journey?

I spent the early years of my life in the United Kingdom before moving to Pakistan when I was about 10. There, I completed some of my schooling as well as my undergraduate degree in electrical engineering at the Lahore University of Management Sciences. In my final year of undergrad, I had a couple of free electives available, and there was a networking security course offered.

That course was a pivotal moment for me. It's how I decided to work on research projects in cybersecurity. Eventually, I moved to the United States in 2014 to pursue my Ph.D. in Computer Science at the University of Illinois at Chicago.

What are your areas of focus?

I focus on security and privacy, looking at how we can use data-driven methods to understand the human side of security. My work involves things like quantifying cybercrime and designing systems that strike the right balance between security and usability. I'm also really interested in how topics like internet censorship connect with cybersecurity and online freedom.

How did you come to the INI?

I was actively seeking academic positions, and my family wanted to be in a bigger city. I learned about the INI, went through the interview process and had a really amazing experience. Everyone was very welcoming and supportive, and I decided to join CMU and become a part of the INI community. The folks — both the faculty and staff — at the INI were the primary reason I chose to join.

How did you become interested in cybersecurity?

It all really started when I took my first course in network security. That one small decision ended up changing the direction of my career. What excites

“
My work involves things like quantifying cybercrime and designing systems that strike the right balance between security and usability.”

me most now is seeing just how critical cybersecurity has become, especially as we rely more and more on AI and other emerging technologies, from Wi-Fi-connected vacuums to self-driving cars.

Why did you decide to teach?

I think a critical moment for me in deciding whether to pursue academia or industry was the summer of 2019. During that time, I had the opportunity to teach my first real course. It was a practicum course where students learned basic C programming. That same summer, I also had an industry internship, and that experience helped me realize which I enjoyed more.

What do you like most about teaching at the INI?

INI students are amazing. I'm passionate about helping them build skills and become the best versions of themselves. They're also very inquisitive and ask a lot of questions, which I appreciate because it gives me new perspectives.

When you think about the advancements in the field, what are you most concerned about?

AI is the big keyword these days, and what I'm most concerned about is its safe and effective use. There are definitely some positive use cases where it can be leveraged to enhance security, but at the same time, AI's own safety and effectiveness rely on training with large datasets. How those datasets are collected and used for continuous retraining has implications. The pace at which AI is developing is outpacing the current regulatory framework, and we're not

really keeping security at the forefront. That's a bit of a concern if we keep going down this route.

It all ties back to safety! We want people to have a positive experience with AI and be able to use it in a productive, sustainable and economical way that supports human and AI coexistence.

What are you most excited about?

I'm excited to be part of this technological transition we are going through. It's a real privilege to be here at CMU during this time. We are seeing so many ways AI is becoming integrated into education and transforming how we teach and how students learn. In my area, the question is: how do we help students see there is still value in learning and doing things themselves, while also teaching them how to use these tools effectively? Because in real life, they will need to use them. ■



Dr. Khan with Logan O'Brien (MSIS 2026)



The Responsible AI Revolution

HANAN HIBSHI: BUILDING THE NEXT GENERATION OF RESPONSIBLE TECH LEADERS

BY EVAN LYBRAND

Assistant Teaching Professor Dr. Hanan Hibshi is training the next generation of experts for the AI era. In her special topics course, 14-713: Secure and Responsible AI, which debuted this past spring, students gained first-hand experience designing systems that utilize AI responsibly.

Hibshi draws from real and hypothetical scenarios across a wide range of fields, from healthcare and financial technology to criminal justice and education, to help students make “SURE” their AI solution is working. SURE stands for Secure, Usable, Responsible, Ethical and is the core principle guiding the course.

Hibshi developed the class to address rising concerns about the ethical and cybersecurity implications of AI’s rapid adoption. “The questions came from everyone — students, industry and collaborators in academia,” she said. “How are we going to go about

AI? How are our systems going to be? How are we going to change our practices?”

“Our students are reading about how AI is disrupting the tech sector. This course is meant to give them the experience and skills to adapt to these changes. They learn how to rethink their work, how they use software and to question AI and its prompts when they find a solution.”

Hibshi challenges students to look at things from a broader context and go beyond general advice to identify solutions to address the issue. “It’s a very good practice for them,” said Hibshi. “They look at larger systems and code bases and deal with legal requirements and compliance. They may not go on to be legal experts in all of these, but they can map things and talk to stakeholders.”

The course culminates in a student-proposed project. Through this project, students explore a topic of interest and produce a



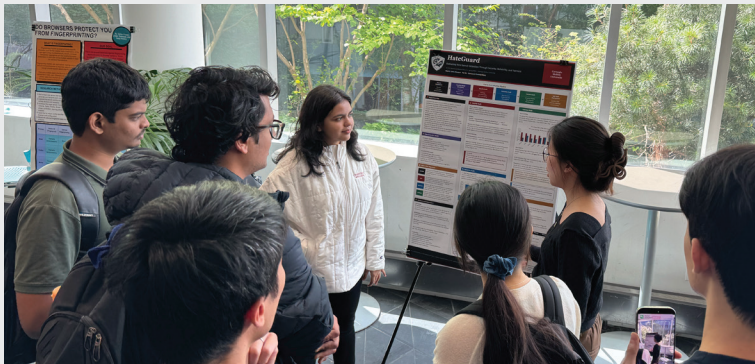
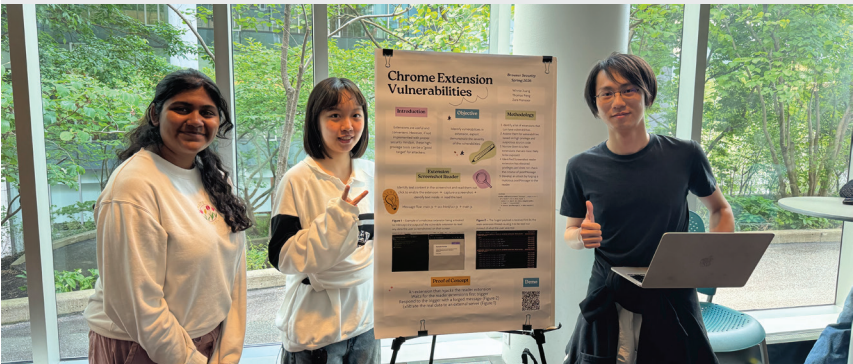
“Our students are reading about how AI is disrupting the tech sector. This course is meant to give them the experience and skills to adapt to these changes.”

technical report. Students are allowed to use AI tools throughout the project as long as they fully disclose their usage.

“It helps build their confidence,” said Hibshi. “It builds their knowledge and helps them judge where the AI tools are falling short. That gives them a lot of rich experience and helps them trust their own skills and to find their own real value in the market.”

This year’s projects were a diverse mix of subjects, including health-care compliance, taxes, financial advice, AI in education and grading and more. “The goal is to allow students to think outside of the box and pick what they’re interested in,” shared Hibshi. “I was really impressed with all these projects. They exceeded my expectations with their creativity.”

At the end of the semester, students shared their projects during a poster session that combined projects from two INI special topics courses. This in person event gave participants a chance to explore each other’s work. ■



Inside a Year of Faculty Impact

From advising students to updating courses and developing their teaching methods, our faculty stay busy throughout the year. You’ve already read about special topics courses taught by Hanan Hibshi and Quinn Jacobson and a Q&A with Taha Khan. In this section, we’ve gathered just a few of the exciting things the rest of our faculty have been up to.

Achieving Goals with Student Advising



Pedro Bustamante
Assistant Teaching Professor

Like all INI faculty, Dr. Pedro Bustamante is a faculty advisor. In this role, he helps guide students through their time at the INI and beyond. “The thing I enjoy the most is the diversity of backgrounds we get to see,” said Bustamante. “Some students want to pursue a Ph.D. and others want to go into industry. I love to be able to help students see all their options and find the one that’s best for their goals.”

Integrating AI into the Classroom



Mohamed Farag
Assistant Teaching Professor

Dr. Mohamed Farag recently joined the inaugural cohort of the Google Higher Ed Faculty AI Fellowship. This Fellowship brings together university faculty members who are integrating AI into teaching, research and institutional innovation. “What we’re trying to do here is make sure that higher education is serving the students well,” said Farag. “We’re giving them the tools, the necessary processes and the empowerment that they need to make sure that they are on a clear path to develop, not to be diminished.”

Measuring Movement with New Tech



Cynthia Kuo
Associate Professor of the Practice

Dr. Cynthia Kuo overhauled her 14-744: Mobile and Embedded Software Design course this spring. She added a new piece of hardware, a programmable microcontroller called the Adafruit Circuit Playground Express. This year, students worked on human activity recognition to differentiate exercises including bicep curls, Zottman curls, hammer curls and lateral raises. They prototyped a wrist-worn “smart-watch” and a smart dumbbell to understand how it would be different to design a system that is worn on the body compared to a standalone object.

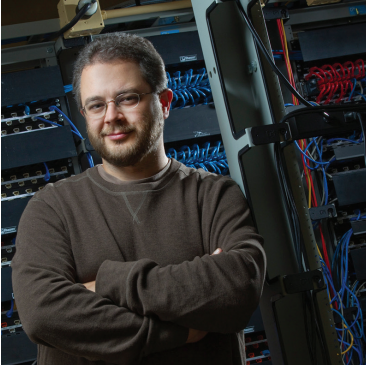
Contributing to Federated Learning



Michael Mattarock
Assistant Director and Assistant Teaching Professor

Dr. Michael Mattarock has been a consistent presence at major technology and engineering conferences, including at DGI, the longest-running international conference for geospatial intelligence professionals. He also celebrated the release of his first international research paper in DGI Compendium on leveraging federated learning for secure data fusion and decision advantage.

Advising the Winningest Team



Patrick Tague
Associate Teaching Professor

Dr. Patrick Tague has once again served as an advisor for the CMU MITRE team and this year proved to be the most intense competition they’ve seen yet. Tague shared his insight on what makes the team a success. “I think the biggest thing we have going for us is CMU’s culture,” said Tague. “We’re incredibly collaborative and cross-disciplinary. We can pull in students and expertise from across departments in ways that many schools simply can’t.”

Staying Ahead of Evolving Technology



David Varodayan
Associate Teaching Professor

Dr. David Varodayan recently reworked his course, 14-795 AI Applications in Information Security, to keep pace with new technological capabilities. “With generative AI and autonomous agents evolving so rapidly, we’ve shifted the focus in 14-795 to stay ahead of how adversaries leverage these technologies,” he said. “Students in the course learn to mitigate LLM misuse and build security directly into the AI infrastructure they’ll be responsible for in the real world.”

Alumni Leadership Council News

GIVING BACK, GROWING TOGETHER — ALC REFLECTIONS FROM THE CHAIR

Serving on the ALC over the past decade has been a truly rewarding experience. It has given me countless opportunities to give back, which has been incredibly fulfilling. The ALC opens doors to contribute in ways limited only by your imagination, whether through mentoring, collaborating with faculty, participating in local events or supporting initiatives that strengthen our community.

I've enjoyed connecting with students, alumni, faculty and the broader CMU network — each interaction has enriched my perspective and deepened my appreciation for CMU's vibrant culture. What makes the experience unique is the flexibility it offers; you can get involved as much or as little as you wish, making it accessible and meaningful for everyone. ■



Yen-Ming Chen (MSIN 1999), ALC chair



ALC Highlights

Launched **"On-site Insights"** as a new initiative within INI Practicum that connects students with local alumni and Silicon Valley companies through workplace visits, offering an immediate, real-world introduction to the CMU-SV network and ecosystem.

10 Held **10** events throughout the year, including alumni panels on setting expectations in the workplace, non-traditional paths and teamwork in the industry.

3 Hosted **3** admitted student meetups in Silicon Valley, CA; Seattle, WA; and New York City, NY

21 Sourced **21** new job leads.

482 Have **482** alumni in our CMUniverse INI mentoring group.



Left: Members of the INI ALC at Carnival this spring. Right: From left to right, Aashay Wadkar (MSIS 2025), Kiran Patel (MSIS 2022) and Sai Sathvik Rупpa (MSIS 2025)

Members

Welcome our new members:

Dimitrios Bakalis
Tilden Jackson (student member)
Amy Rambhia
Ken Schwartzreich
Suyan Xu

Thanks to our continuing members:

Yen-Ming Chen (Chair)
Vijeyta Aggarwal
Hao-Wei Chen
Benjamin Draffin
Alfredo Freyre
Diwakar Goel
Nitin Gupta
Hugrun Hannesdottir
Eyre Hernandez
Yasmine Kandissounon
Xinfeng Le
Benicio Miguel Sanchez Fuentes
Wayne Tung
Devika Yeragudipati

Thank you to our outgoing members:

Chris Dorros
Servio Lima



INI alumni pose with current and incoming students during a Seattle meetup this summer

Get Involved



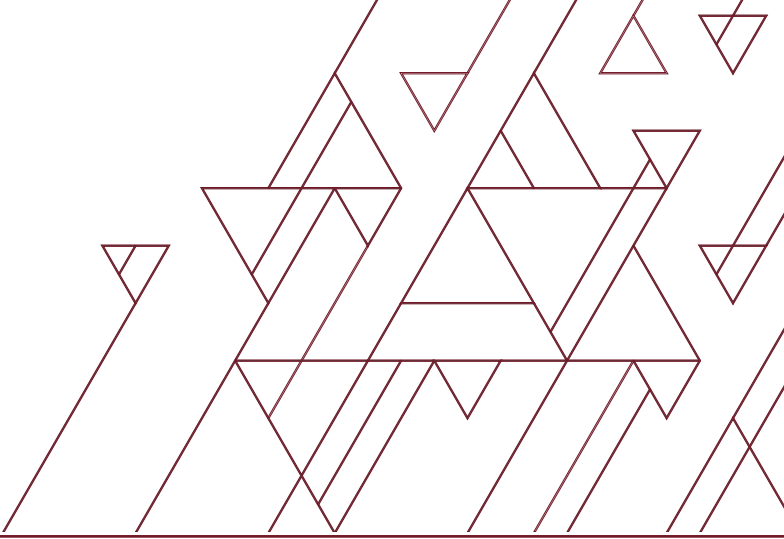
We need your support!

Sign up to be a mentor on CMUniverse

Share job or internship leads
ini-careerservices@andrew.cmu.edu

Want to discuss other ideas? Contact Sari Smith at
ini-alumni@andrew.cmu.edu

alumni achievements



TARTAN ON THE RISE

Susana Lau (MSIT-SM 2015) is the founder and CEO of EtyaLab, a software development company. Lau has mentored startups in the Panama technology community and given back through her roles with IEEE, including vice president of product and formerly the vice-chair and Latin America team lead. Lau also co-founded the CREEA Foundation to foster civic engagement entrepreneurship in Panama. She is the fifth INI alum to be recognized as a Tartan on the Rise.



Left to right: CMU President Dr. Farnam Jahanian, Susana Lau (MSIT-SM 2015) and Dr. Dena Haritos Tsamitis

CMU ALUMNI AWARDS

TYELISA SHIELDS

Tyelisa Shields (MSIT-IS 2010) received the Alumni Service Award. Shields has been an engaged member of the INI community since her graduation. She joined the INI's ALC in 2015 and has been involved in supporting students interested in the cybersecurity field. She has also been a consistent presence in both Pittsburgh and Silicon Valley, mentored students through CMUniverse and spoken at alumni panels.



Tyelisa Shields (MSIT-IS 2010)



Left to right: College of Engineering Dean Dr. Burcu Akinci, Yen-Ming Chen (MSIN 1999) and John Sontag

COLLEGE OF ENGINEERING ALUMNI AWARDS

Yen-Ming Chen (MSIN 1999), a senior manager with Apple, was honored with the CMU College of Engineering Alumni Service Excellence Award. Chen has been a prominent figure in the INI community. He is the current chair of the INI Alumni Leadership Council (ALC) and has been a member since 2017. Beyond the ALC, Chen has served as a mentor, taught a special topics course on cloud security at CMU in Silicon Valley, sponsored an INI Practicum project and organized local meetups for Seattle-based alumni.



Samantha Allen (MSIS 2015)

SAMANTHA ALLEN

Samantha Allen (MSIS 2015) received the Recent Alumni Service Award. Allen has been an engaged mentor for INI students and regularly participated in Women@INI (WINI) events as an alumni panelist. During her decade of service, Allen has served as a member of the ALC for four years, two of which as chair. She has also worked to connect alumni and students during the COVID-19 pandemic through facilitating virtual meetings and reunions.

NOTEWORTHY ALUMNI NEWS

LED INTERVIEW WORKSHOP

AMY RAMBHIA

Amy Rambhia (MSIS 2007) visited the INI this past spring to speak with current students about navigating today's interview landscape. Rambhia focused her session on helping students rethink how they approach interviews, pulling from her over 15 years of experience as a product manager working with companies including Microsoft, Apple, Slack and Meta.

"Employers aren't looking for a reason to fail you," she said. "They're looking for reasons to hire you. So, focus on how you show up."



Left to right: Keshav Raju (MSIS 2026), Manigandan Ramadasan (MSAIE-IS 2026), Amy Rambhia (MSISTM 2008), Daniel Carr and Bhargavee Chavarkar (MSAIE-IS 2026)



Vikramraj Sitpal (MSIN 2021)



The real test is applying that foundation to systems where performance, security, reliability and business requirements all matter at once."

ATTENDED PARALLEL DATA LAB WORKSHOP AND RETREAT

VIKRAMRAJ SITPAL

Sitpal (MSIN 2021) is now a senior development manager in Oracle's Database organization attended the retreat which brought together researchers, students and industry professionals working at the frontiers of storage systems, databases and large-scale computing.

"The INI gave me the rigor and the environment to go deep," said Sitpal. "The real test is applying that foundation to systems where performance, security, reliability and business requirements all matter at once. That combination — deep technical understanding and the ability to translate it into production engineering — is what I use every day."



Karthik Suresh (MSIN 2008)

SOLD TWO AI STARTUPS KARTHIK SURESH

Karthik Suresh (MSIN 2008) has sold another of his startups, DoubleO.ai, after his other startup, Ignition, raised \$8 million in funding. Currently, Suresh is a Senior Product Director at Zoom-Info, working to incorporate AI into their products.

"At the INI, you have the options to explore accounting, business management and entrepreneurship strategy from Tepper [School of Business] or Heinz [College of Information Systems and Public Policy]," said Suresh. "And you really need that well-rounded education."

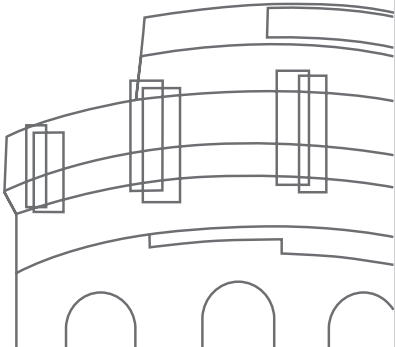
EARNED AWS GOLDEN JACKET HARSHVARDHAN CHUNAWALA

Harshvardhan Chunawala (MSIT-IS 2023) joined the prestigious group of roughly 100 Amazon Web services Golden Jacket holders last year. The AWS Golden Jacket is one of the most selective recognitions in the global cloud computing ecosystem.

"This recognition stands for more than certifications," he said. "It reflects decades of building secure cloud systems, architecting infrastructure for regulated industries and investing in others through academia and mentorship."



Harshvardhan Chunawala (MSIT-IS 2023) with brother Pratikkumar Chunawala (right)



Your Gift Matters



HIRE OUR STUDENTS

We are always seeking internship and full-time job opportunities that fit our students' unique skillset. Learn more about how you can partner with us.



SPONSOR PRACTICUM

Our newly reimagined Practicum sponsorship now includes more ways to be engaged! Join as an INI Innovator to sponsor a Practicum and connect with our community.



BECOME A MENTOR

Participate in CMUniverse and share your insights with current students! Provide advice about building a successful career, finding meaningful professional development and growing a network. Join at cmuniverse.peoplegrove.com.

CONNECT WITH US

Social media is a great way to stay connected with the INI:

Facebook Group: Search "INI Alumni" and request to join.
LinkedIn: Carnegie Mellon Information Networking Group.



Graduate Matthew Ung (MSIS)
with sister

ini

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