

Computer Science

IN THIS ISSUE //

May 29, 2026 / Bulletin #9

Upcoming Seminars

CS Events

Northwestern Events

Awards

News

IMPORTANT DATES & REMINDERS

Monday, June 8, 2026 Spring examinations begin

Friday, June 12, 2026 Spring examinations end

Friday, June 19, 2026 Juneteenth - University Closed

Monday, June 22, 2026 Spring Degree Conferral

Monday, June 22, 2026 Summer classes begin

We want to hear from you!

Please send any upcoming news and events to cs-news@northwestern.edu to be included in future bulletins, on our socials and/or website.

Missed a seminar? No worries!
View past seminars via the Northwestern CS Website.

[View Past Seminars »](#)

UPCOMING SEMINARS

No Upcoming Seminars

CS Department Events

CSPAC, CSSI, AND GWIC RECRUITMENT

PhD students, we are looking for future student leaders to join our student organizations! This is a great opportunity to develop leadership, organization, and communication skills that are essential for any post-PhD career. More information and the (lightweight) nomination form can be found [here](#).

[Nomination Form »](#)

CS GRADUATION RECEPTION

Dear CS Class of 2026,

Congratulations on your upcoming graduation! We are excited to celebrate your achievements at the Computer Science Graduation Reception, held in your honor.

Event Details

Date & Time: June 13th at 4:30pm - 6:30pm

Location: Mudd Lawn

We sincerely hope you can join us for an evening of recognition, celebration, and connection as we mark this important milestone together.

If you plan to attend, please RSVP using this form: [CS Graduation Reception - Class of 2026](#) 🎓

Thank you, and we look forward to celebrating with you!

🕒 **Saturday, June 13, 2026**
4:30 PM - 6:60 PM CT

📍 **Mudd Lawn,**
2233 Tech Drive, Evanston, IL 60208

[Graduation Celebration RSVP »](#)

GUO YE CS PHD FINAL DEFENSE: EMBODIED AI: METHOD, SIMULATION & SYSTEM

Embodied AI promises agents that perceive, reason, and act in the physical world, yet realizing such agents demands more than algorithmic novelty. Progress at the frontier increasingly depends on the co-design of three tightly coupled layers: the methods that learn behavior, the simulation infrastructure that supplies the data and experience to learn from, and the systems that bridge learned policies to physical hardware. This dissertation argues that the next generation of embodied-AI researchers must be full-stack roboticists, fluent across all three layers, and presents my previous works that together trace this thesis.

🕒 **Monday, June 1, 2026**
10:30 AM - 11:30 AM CT

📍 **Mudd 3514,**
2233 Tech Drive, Evanston, IL 60208

[More Details »](#)

YIAN SU CS PHD FINAL DEFENSE: AUTOMATING PARALLEL EXECUTION PLAN SELECTION AND TUNING

Modern hardware is parallel and is increasingly relying on parallel programming to achieve both performance and energy efficiency. However, today's parallel programming places a disproportionate burden on developers, requiring them to design and fine-tune parallel execution strategies across diverse hardware platforms and varying program inputs. I postulate that optimizing compilers can relieve developers from this burden by automatically reasoning about parallel execution strategies while also enforcing correctness properties. Achieving high parallel performance across modern hardware requires selecting an effective parallel execution plan, including how and where parallelism should be expressed and implemented. To automate this selection process, I introduce the Parallel-Semantics Program Dependence Graph (PS-PDG), a compiler abstraction that captures developer-encoded parallel semantics alongside compiler-derived analysis. PS-PDG enables compilers to override suboptimal execution plans with superior alternatives. While static execution-plan selection is effective for regular workloads, irregular and input-sensitive applications require runtime adaptation of parallel granularity. To address this challenge, I introduce the Heartbeat Compiler (HBC), a compilation system that automatically translates high-level fork join parallelism into binaries capable of dynamically controlling task granularity through heartbeat scheduling to eliminate the need for manual task-size tuning. Beyond performance, parallel C++ applications also face severe memory-safety risks arising from operations on data collections, including iterator invalidation. These bugs are difficult for existing tools to detect precisely and become even harder to diagnose under nondeterministic thread interleavings. To address this challenge, I introduce Ledger, a data collection-oriented static analyzer that provides high-precision detection of invalidation vulnerabilities in programs that operate on complex data collections.


🕒 **Wednesday, June 3, 2026**
2:00 PM - 4:00 PM

 Mudd 3501,
2233 Tech Drive, Evanston, IL 60208

[More Details »](#)

JIAHAO YU CS PHD FINAL DEFENSE: ADVANCING CYBERSECURITY THROUGH EXPLAINABLE AI

There is growing momentum—from industry, government, and academia—to use AI for automating cybersecurity tasks. Yet practitioners remain skeptical: while 87% of security leaders expect AI to enhance their roles, only 9% believe it will replace significant parts of them. This gap stems from two fundamental barriers: limited capability and lack of trust. In this talk, I present my research on addressing these barriers through explainable AI. I first introduce StateMask, a method that automatically identifies critical decision steps in AI agent trajectories, enabling security professionals to understand why an AI-generated patch succeeded or failed. A user study with 41 experienced developers shows that 89% find our explanations aligned with their reasoning. I then present GPO, which leverages these explanations to synthesize high-quality training data without expensive expert annotation, thereby improving model capability. GPO-trained open-source models achieve performance competitive with leading commercial models on vulnerability patching, and its extension, EntroPO, ranks 1st on SWE-Bench Lite among all open-weight models. I conclude by discussing future directions toward building AI systems that are robust to imperfect data, trusted by security professionals, and capable of tackling real-world cybersecurity challenges.

 **Friday, June 5, 2026**
9:00 AM - 11:00 AM CT

 **Virtual**

[More Details »](#)

Other Events

**CONTEXTUALIZING ENGINEERING SEMINAR:
"HIDDEN FIGURES: THE UNSEEN POWER OF GUT**

MICROBES AND A CULTURE OF INCLUSION ADVANCING NEXT GEN BIOMANUFACTURING" | KEVIN SOLOMON, UNIVERSITY OF DELAWARE

The Department of Chemical and Biological Engineering is pleased to present our annual Contextualizing Engineering Seminar with Kevin Solomon, Associate Professor of Chemical and Biomolecular Engineering at the University of Delaware.

Dr. Solomon will present a seminar titled "HIDDEN FIGURES: The unseen power of gut microbes and a culture of inclusion advancing next-gen biomanufacturing."

Microbial chemical factories are sustainable biomanufacturing platforms that complement traditional petrochemical industries by using renewable and/or alternative carbon sources. Most attractive of these are those derived from unconventional microbes due to their rich repertoire of enzymes to efficiently process diverse carbon sources and unique capacity to catalyze certain industrial chemistries at scale. These properties are frequently a consequence of the high resource competition in their native exotic environments, such as animal microbiomes. However, these microbes remain poorly characterized with few tools to deploy them for industrial applications. In this talk, I will describe our progress towards the study and engineering of these systems for the use of post-consumer plastics and lignocellulosic biomass. I will also share some of our work building an inclusive community of scholars to foster development of a more creative next generation workforce.

🕒 **Thursday, June 4, 2026**
9:30 AM - 10:45 AM

📍 **Pancoe-NSUHS Life Sciences Pavilion, Pancoe Auditorium,**
2200 Campus Drive, Evanston, IL 60208

[More Details »](#)

Awards



Congratulations to Walter Willinger on being awarded the 2026 ACM SIGCOMM Award for Lifetime Contribution

[Award Details](#)

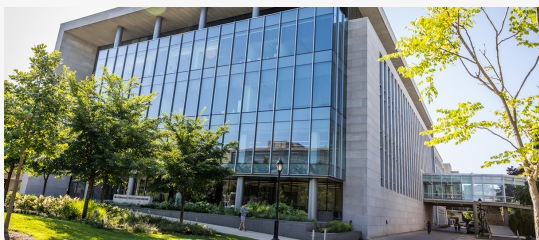
CS News



Northwestern Hosts the Greater Chicago Area Systems Research Workshop

Professors Peter Dinda and Andrew Crotty co-led the organizing committee for GCASR 2026, held May 11 at the Norris University Center.

[Read Full Article](#)



2026 Outstanding CS Seniors

Northwestern Computer Science recognizes graduating computer science students for their impactful contributions.

[Read Full Article](#)



Northwestern Department of Computer Science
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