Northwestern | **McCORMICK** SCHOOL OF **ENGINEERING**

Computer Science

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IMPORTANT DATES & REMINDERS

Friday, October 24, 2025 *Application for degree due to TGS to receive a degree in Fall*

Monday, November 3, 2025 *Pre-registration for Winter quarter begins*
Monday, November 10, 2025 *Registration for Winter quarter begins*
Wednesday, November 26, 2025 *University offices close at 5:00 pm for Thanksgiving break*

Friday, December 5, 2025 *Master's completion form due for TGS Fall master's candidates*
Monday, December 8, 2025 *Fall Exams begin*
Monday, December 15, 2025 *Grades due 3:00 PM*
Friday, December 19, 2025 *Fall 2025 Degrees Conferred*
Wednesday, December 24, 2025 *Winter Recess Starts - University Closed Through January 1st, 2026*

We want to hear from you!
Please send any upcoming news and events to
news@cs.northwestern.edu to be included in future bulletins &/featured
on our socials/website.

Events for the bulletin must be emailed by Thursdays 12PM to be in that
Friday's bulletin.

Missed a seminar? No worries!
View past seminars via the Northwestern CS Website
(northwestern login required).

View Past Seminars »

UPCOMING SEMINARS

Please note the seminar scheduled for Monday 29 September has been cancelled.

October
1st - Lane Gunderman
15th - Jason Hartline

November
3rd - Aloni Cohen
10th - Aravindan Vijayaraghavan
19th - Robert Rand

Designing Quantum Codes using Physics Constraints

Lane Gunderman, University of Illinois-Chicago

Abstract

Quantum computers are widely believed to enable massive computational speedups for certain tasks. The downside to quantum computers, due to their very nature, is that they require having reliable information that is extremely susceptible to noise. For this reason quantum error-correction is expected to be needed to perform reliable computations. In this talk I will discuss my work in improving the quality of error-correction through two different approaches. Firstly designing around different platform's qubit characteristics, such as mobility. Secondly, as many qubit devices are a simplification of the physics underlying these systems, I have developed methods for generating quantum error-correcting codes which are perhaps more suitable for these systems and can better leverage the true dynamics of the system.

Biography

Lane is originally from Chicago (or Evanston depending on the year). He obtained Bachelor degrees in physics and math from MIT, then obtained his PhD from the Institute for Quantum Computing (IQC) at the University of Waterloo in Canada in the Fall of 2022. He then worked at Xanadu Quantum Technologies for about a year, then joined HRL for half a year, before joining UIC's ECE department, in the Fall of 2024.

🕐 **Wednesday, October 1, 2025**
12:00 PM - 1:00 PM CT

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

More Information »

Scoring Rules for a Theory of AI
Jason Hartline, Northwestern University

Abstract

Scoring rules are foundational in decision theory and, therefore, are foundational for a developing theory of artificial intelligence. Just as simple models from decision theory provide context for understanding the decisions of complex humans, so too can they for complex AI systems. Bayesian decision theory considers an agent receiving a signal that is correlated with the state, choosing an action, and obtaining a payoff that depends on both the state and action. With Bayesian updating and the revelation principle, the signal becomes a posterior belief and the decision problem becomes a scoring rule. Given a scoring rule, baseline performance is the optimal score under the prior; benchmark performance is the optimal score under the posterior; and the optimal scoring rule — framed as a mechanism design problem — maximizes the difference between them. The talk reviews this theory and applies it to evaluate the value of information, the losses from predictive models, and the accuracy of human and AI decision makers.

Biography

"Prof. Hartline's research introduces design and analysis methodologies from computer science to understand and improve outcomes of economic, legal, and AI systems. Optimal behavior and outcomes in complex environments are complex and, therefore, should not be expected; instead, the theory of approximation can show that simple and natural behaviors are approximately optimal in complex environments. This approach is applied to auction theory and mechanism design in his graduate textbook Mechanism Design and Approximation which is under preparation.

Prof. Hartline received his Ph.D. in 2003 from the University of Washington under the supervision of Anna Karlin. He was a postdoctoral fellow at Carnegie Mellon University under the supervision of Avrim Blum; and subsequently a researcher at Microsoft Research in Silicon Valley. He joined Northwestern University in 2008 where he is a professor of computer science. He was on sabbatical at Harvard University in the Economics Department during the 2014

calendar year and visiting Microsoft Research, New England for the Spring of 2015. He was on sabbatical at Stanford University for the 2023-2024 academic year.

Prof. Hartline is the director of Northwestern's Online Markets Lab, he was a founding codirector of the Institute for Data, Econometrics, Algorithms, and Learning from 2019-2022, and is a cofounder of virtual conference organizing platform Virtual Chair."

🕐 **Wednesday, October 15, 2025**
   12:00 PM - 1:00 PM CT

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

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CS Department Events

SYSTEMS GROUP TALK: LOOM: EFFICIENT CAPTURE AND QUERYING OF HIGH-FREQUENCY TELEMETRY (FRANCO SOLLEZA)

Speaker
Franco Solleza, Brown University

Talk Title
Loom: Efficient Capture and Querying of High-Frequency Telemetry

Abstract
To debug performance issues, engineers often rely on high-frequency telemetry (HFT) from sources like perf, DTrace, or eBPF, which can generate millions of records per second. Current database systems are too slow to capture such high-rate data in its entirety, and the de facto standard approach of writing HFT to raw files makes queries slow and cumbersome. Engineers must therefore either work with incomplete data, which risks missing critical events, or accept slow queries.

Loom is a new system specialized for capturing and analyzing HFT with timely, interactive queries. Key to Loom's design is that it combines the high ingest capability of log-based storage with lightweight, sparse, and domain-specific indexes that accelerate queries. This design strikes a balance: it prioritizes capturing complete data at high rate while indexing just enough to support interactive queries on HFT.

Experiments show that Loom supports both higher ingest throughput and lower query latency than best-in-class systems for ingest-optimized storage (FishStore) and time series databases (InfluxDB), all while consuming substantially fewer host resources and ensuring data completeness.

Biography
Franco Solleza is a final year PhD student at Brown University working with Malte Schwarzkopf. His current research focuses on making it easier for users to understand their complex system deployments. He is also investigating how to make it easier for non-experts to safely extend an OS kernel using domain-specific languages.

🕐 **Friday, October 3, 2025**
   3:30 PM - 5:30 PM CT

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

More Information »

NITMB-IDEAL FALL 2025 KICKOFF EVENT

Date: Monday, October 6th 2025

Location: NITMB (The National Institute for Theory and Mathematics in Biology) (875 N. Michigan Avenue, 35th floor, Chicago, Illinois) (Suite 3500)

Building Entrance: 172 E Chestnut St suite 3500, Chicago, IL 60611

Parking and Transportations: https://www.nitmb.org/getting-here

Registration: https://docs.google.com/forms/d/e/1FAIpQLSexnDf-PS7blBrmiMp9rbD-bZ_8KGrQMHqUF7VLyqdv53V08w/viewform

🕐 **Monday, October 6, 2025**
9:30 AM - 4:00 PM CT

📍 **NITMB (The National Institute for Theory and Mathematics in Biology) (875 N. Michigan Avenue, 35th floor, Chicago, Illinois) (Suite 3500)**

More Information »

DATA WAREHOUSING: THE INDUSTRIAL PERSPECTIVE | ACM CHICAGO TALK

Join us in Mudd 3514 for a presentation by Henrietta Dombrovskaya, ACM Chicago Chapter Communications Chair and Illinois Prairie Postgres User Group Organizer for an abbreaviated version of the Data Warehousing: The Industrial Perspective tutorial. The presentation will be followed by a Q&A and information about the Northwestern ACM Chicago Student Chapter.

🕐 **Tuesday, October 7, 2025**
6:00 PM - 7:00 PM CT

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

More Information »

CS PUBLIC LECTURE

The Computer Science department invites you to a free public lecture on October 29, 2025. The lecture will begin at 4:00PM in Cohen Commons.

Further details regarding topic and how to register will be shared in the upcoming weeks.

🕐 **Wednesday, October 29, 2025**
4:00 PM - 6:00 PM CT

📍 **Cohen Commons, Technological Institute,**
2145 Sheridan Road, Evanston, IL 60208

More Information »

Other Events

THE 2025 CIERA ANNUAL PUBLIC LECTURE: A NEW EYE ON THE UNIVERSE OPENS: THE VERA C. RUBIN OBSERVATORY

Each year, Northwestern University's Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA) invites a renowned speaker to campus for our Annual Public Lecture. This year's speaker is Harvard astronomer and experimental physicist Professor Christopher W. Stubbs. This year marks the birth of an ambitious new scientific project. Based in Chile, the Vera C. Rubin Observatory will take a decade-long time-lapse movie of the entire Southern sky, using the largest digital camera ever made. First-look images were released this summer, and the project is now transitioning into full operation. Professor Stubb's talk will describe how the unprecedented torrent of 20 terabytes per night will propel projects ranging from searches for potentially hazardous asteroids to mapping out the history of cosmic expansion. In particular, the Rubin data will provide new insights into "dark matter," the mysterious substance that comprises 90% of the mass in our own Milky Way galaxy, as well as "dark energy," which is driving the runaway expansion of the Universe. Stubbs will also describe the evolution of the project itself, and the romance of working in the high Atacama desert. This event is generously supported by The Alumnae of Northwestern University. If you have any questions about this event, or would like to make an accessibility request (eg. ASL interpretation), please contact **ciera-events@northwestern.edu**.

For those unable to make it to Evanston, the lecture will be livestreamed on CIERA's website: **https://ciera.northwestern.edu/ciera-livestream/**

🕐 **Friday, October 3, 2025**
7:00 PM - 8:15 PM CT

📍 **Technological Institute, Ryan Family Auditorium,**
2145 Sheridan Road, Evanston, IL 60208

More Information »

CS News

Wearable Sensors Could Reshape Obesity Treatment

A team led by Professor Nabil Alshurafa developed a groundbreaking lifestyle medicine program that uses three wearable sensors to capture real-world overeating behavior, providing a foundation for personalized interventions.

Read More

Northwestern Engineering Names Winners of 2025 Cole-Higgins Awards

Joshua D'Arcy, Izzy Grosof, Jeremy Keys, Amjed Shafique, and Robert Linsenmeier received the school's annual awards for outstanding teaching and advising.

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Northwestern Department of Computer Science

Mudd Hall, 2233 Tech Drive, Third Floor

Evanston, Illinois 60208

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