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**AI, fully integrated: UW-Stout’s 360-degree approach to artificial intelligence embeds skills across all programs**

**‘Equipping students from every major with AI skills is not only important but necessary’**

Written by ​Abbey Goers, University of Wisconsin–Stout

From engineering to communication and counseling, manufacturing, marketing and design, construction, supply chain and more, UW-Stout is preparing graduates to meet the needs of a rapidly evolving workforce by embedding AI training in all of its degree programs.

And its comprehensive approach to AI literacy is more than program curriculums – Wisconsin’s Polytechnic University is collaborating with community, business and industry partners through its innovation centers, consulting services, continuing education courses and regional consortiums to help Wisconsin leverage AI-driven solutions that put it ahead of the curve.

Faculty, staff and students alike are leading the charge, including [computer and electrical engineering](https://www.uwstout.edu/programs/bs-computer-engineering) seniors and AI Student Club members **Corey Hedlund** and**Michael Witt**.

Hedlund, the club president, and Witt, club secretary, are leading a community of learners and enthusiasts who are passionate about artificial intelligence. The club also works to support UW-Stout’s goal of a [360-degree AI education approach](https://www.uwstout.edu/academics/academic-services/learning-information-technology/artificial-intelligence-uw-stout).

“AI consists of a number of skill sets. Equipping students from every major with AI skills is not only important but necessary,” said engineering and technology **Assistant Professor Yuan Xing**, AI Club adviser.

“The impact of AI is very obvious across industries and daily life. Some disciplines are even completely revolutionized. So, teaching all students AI knowledge and skills can help them be well prepared for the job market. This aligns perfectly with UW-Stout’s career-focused and real-world experience education goals, helping all graduates stay competitive and adaptable in their future careers,” he added.

Hedlund and Witt joined **Provost Glendalí Rodríguez** recently in a presentation on “AI In Action: Advancing the Universities of Wisconsin,” led by the UW Education Committee at the Board of Regents meeting, Feb. 6-7.

**Student leadership in AI**

By teaching AI through hands-on, easy-to-follow activities – no AI background needed – the AI Student Club allows any student to learn, regardless of their major. It also holds AI seminars on trends and research, with student and industry speakers.

“The club plays an important role in embedding AI in every curriculum by exploring the diverse potential of AI across different disciplines because club members come from different majors,” Xing said.

Club members are heavily involved in applied learning activities both on and off campus. Hedlund, Witt, and club members **Jack Lonn** and **Steven Kronmiller** won first place at the 2024 [DigiKey DKC3 Coding Competition](https://www.digikey.com/en/resources/edu/dkc3-computing-competition" \l "Tabs1" \o "(opens in a new window)" \t "_blank) last fall. Supervised by Xing and**Professor Ahmet Turkmen**, the team defeated 20 teams from 11 Midwest universities. In 2023, the team won second place in the competition.

The club helped prepare and demonstrate innovative AI to Gov. Tony Evers when he visited campus last spring. They attended an AI presentation conducted by UW-Stout and UW-River Falls faculty last fall. Read more about the faculty’s cross-disciplinary research below.

The club’s future goals include collaborating with university partners such as K-12 schools, two-year colleges and industry partners to develop hands-on AI applications in areas such as electronic vehicles, vision inspections, community services and more.

Faculty awarded for AI research

The university’s AI Fellows and AI Innovation Committee are led by faculty and staff, who ensure AI is embedded into learning, operations and innovation, and who direct AI integration, governance, ethics and literacy.

Faculty research impacts students' experiences, and experts across degree fields have been awarded for pushing AI research forward.

"Our interdisciplinary AI Fellows, supported by the 2023-25 Workforce Development funding, exemplify our dedication to integrating AI into every aspect of our academic offerings,” said **Professor Keith Wojciechowski**, program director of [M.S. applied mathematics and data science](https://www.uwstout.edu/programs/ms-applied-mathematics-data-science). Fellows’ research includes:

* Food and nutrition **Professor Kerry Peterson** is advancing AI-related academic programming in health care professions, with specific courses on healthy eating and the art and science of food.
* Engineering **Professor Anne Schmitz** is integrating a commercially available AI chatbot into a hybrid Machine Components course.
* Graphic design **Professor Nagesh Shinde**, collaborating with **Library Director Roxanne Backowski**, is developing an Augmented Reality/Virtual Reality Lab in the University Library.

For leading the way in cybersecurity and for heroutstanding educational contributions to the industry, [B.S. cybersecurity](https://www.uwstout.edu/programs/bs-cybersecurity) and [B.S. computer networking and infrastructure engineering](https://www.uwstout.edu/programs/bs-computer-networking-infrastructure%20engineering) **Program Director Holly Yuan** received the Visionary Academic Leadership Award at the 14th annual [Cyber Security Summit](https://www.uwstout.edu/about-us/news-center/cybersecurity-program-director-receives-national-visionary-academic-leadership-award) last fall. She has integrated courses, including Application of Generative AI in Cybersecurity, to engage students in cutting-edge research involving cybersecurity, AI and cloud computing.

“AI can be leveraged to enhance cybersecurity controls and processes, helping our students stay ahead of emerging trends. In the field of cybersecurity, generative AI is quickly becoming a tool for both defensive and offensive measures. We’re focused on integrating these aspects into our curriculum to ensure our students are well-equipped to address challenges,” Yuan said.

[Marriage and family therapy](https://www.uwstout.edu/programs/ms-marriage-family-therapy) **Assistant Professor Heather Hessel** received the Carl Whitaker Award from the Wisconsin Association for Marriage and Family Therapy in December for [advancing AI integration with therapy](https://www.uwstout.edu/about-us/news-center/marriage-and-family-therapy-professor-awarded-advancing-ai-integration-therapy).

Professors in a cross-disciplinary engineering/social science project, A Human­Centered Collaborative Approach to Designing an Energy-Efficient Wireless Sensor Network, are developing [**customized, energy-efficient, low-cost technology**](https://www.uwstout.edu/about-us/news-center/future-farming-wisconsin-professors-design-customized-energy-efficient-low-cost-technology) for precision agriculture to meet the needs of Wisconsin farmers.

The team is led by Xing and [applied social science](https://www.uwstout.edu/programs/bs-applied-social-science) **Program Director** **Tina**Lee and includes UW-Stout engineering professors**Cheng Liu** and **Abhishek Verma**, and UW-River Falls Professor Bob Zhiwei Zeng.

Their project includes several aspects: a ground wireless sensor network, machinery for automation, livestock monitoring and drone data collection to help farmers make informed decisions based on real-time and historical data. They demonstrated the prototypes and machinery at Mann Valley Farm in River Falls. The project is funded by a two-year, $175,000 [Universities of Wisconsin Innovation Grant](https://www.uwstout.edu/about-us/news-center/interdisciplinary-innovation-uw-stout-professors-wireless-sensor-network-crops-receives-175000-grant).

Xing is also studying AI related to the [packaging of fruit](https://www.uwstout.edu/about-us/news-center/smart-solutions-ai-research-uw-stout-engineering-professors-targets-fresher-fruit-product-structures). With his system, an automated guided vehicle in a warehouse would bring fruit to a vision sensor, an AI algorithm would determine freshness, and the vehicle would then separate the good fruit for packaging.

Schmitz is conducting [sustainable manufacturing research](https://www.uwstout.edu/about-us/news-center/smart-solutions-ai-research-uw-stout-engineering-professors-targets-fresher-fruit-product-structures) on mesostructures, or 3D-printed internal lattices that absorb energy and reduce material use. Her research uses AI to fine-tune mesostructure design for maximum energy absorption and lighter, more efficient products.

In engineering technology **Professor Kevin Dietsche’s** Design for Industry course, his students joined kindergartners from St. Paul’s School of Menomonie for a [toy design project using AI rapid prototyping](https://www.uwstout.edu/about-us/news-center/design-industry-students-create-kindergartners-ideal-toys-through-ai-rapid-prototyping). Their toy ideas ranged from vehicles to a magic spell-casting kit, animals, dolls, action figures and more.

Faculty, centers supporting statewide industry

**Professor David Ding,**director of the [Robert F. Cervenka School of Engineering](https://www.uwstout.edu/academics/colleges-schools/college-science-technology-engineering-mathematics-management/robert-f-cervenka-school-engineering), serves on the [Governor’s Task Force on Workforce and Artificial Intelligence](https://dwd.wisconsin.gov/ai-taskforce/). Ding brings an important voice to the task force, representing higher education in western Wisconsin, giving a different perspective than members from the Milwaukee and Madison areas.

“As a polytechnic university, we operate differently. It’s important for the Department of Workforce Development to hear our side, know our strategic planning and see how we serve our partners, students and community,” Ding said.

“Stout offers a very unique way to transfer AI knowledge, skillsets and technologies. We help organizations hire and train employees to create highly skilled teams. This meets the task force’s goal perfectly,” he added. “We also seek external grants to serve students – especially in rural areas – to give them access to AI technology, equipment and courses. Stout serves to fill this cup, supporting a pathway to develop the state’s workforce.”

UW-Stout’s [Center for Advanced Manufacturing and Artificial Intelligence](https://www.uwstout.edu/about-us/news-center/next-gen-manufacturing-new-cam-ai-will-leverage-resources-support-industry-wisconsin) was formed in fall 2024. CAM-AI, partnering with the university’s Manufacturing Outreach Center, delivers comprehensive, proven solutions through consulting, training and workforce development for small and midsize manufacturers in Wisconsin and Minnesota

“UW-Stout's ability to supply expertise to address practical problems is what distinguishes us as a polytechnic university, and CAM-AI will be the entity through which this expertise can be made available to industry,” said **Seth Hudson**, executive director of the  [Office of Corporate Relations and Economic Engagement](https://www.uwstout.edu/outreach-engagement/corporate-relations-economic-engagement/fab-lab).

The Central Wisconsin AI Center is a collaboration between UW-Stout, UW-Stevens Point, Northcentral Technical College, the Greater Wausau Chamber of Commerce and the Midpoint Consulting Group. CWAIC is an initiative focused on the adoption of AI through workforce training and industry integration across central and northcentral Wisconsin.

It serves as a hub for AI education, business development and workforce transformation, and is poised as a catalyst for regional economic development through training programs, K-12 educational pathways and industry-specific AI solutions.

The U.S. Department of Defense Cyber Service Academy awarded UW-Stout a 12-month, $124,555 federal grant to create ACCESS — the [**AI-Powered Cloud CMMC and Education Support System**](https://www.uwstout.edu/about-us/news-center/granted-access-125k-award-will-improve-cybersecurity-us-defense-supply-chain) – to help businesses guard against cybersecurity threats.

The online [bachelor's in automation leadership](https://www.uwstout.edu/programs/bs-automation-leadership) gives students skills in smart manufacturing. The only degree of its kind, it is a gateway to leadership in Industry 4.0 and is designed for technical and community college students who have an associate degree and incorporates training in SACA — the [Smart Automation Certification Alliance](https://www.saca.org/). An [AI course for educators](https://www.uwstout.edu/academics/online-distance-education/online-professional-development/foundations-artificial-intelligence-educators) offers a foundational course on generative AI prompt writing.

Learn how to [engage with UW-Stout](https://uwstout.cld.bz/Industry-Business-Partner-Engagement).

**Advancing the community through AI literacy**

UW-Stout’s AI Integration Technologist **Emily Laird** collaborates to support campuswide and community efforts in AI integration, engaging industry leaders, educators and policymakers in discussions on the changing role of AI in business, education and society.

“AI literacy is no longer optional; it’s essential to everyone,” Laird said. “AI is real-time reshaping every industry, from education and health care to business and the arts.”

Laird leads [AI Weekly meetups](https://www.uwstout.edu/academics/academic-services/learning-information-technology/artificial-intelligence-uw-stout) on Wednesdays to explore the world of artificial intelligence and generative artificial intelligence and unpack the latest breakthroughs and debate dilemmas through open discussion that touches on ethics, safety and the fundamental question of what it means to be human in an AI-driven world.

The meetups are open to the community and alumni. From novice to expert, everyone is welcome. Recent topics focused on AI Safety, including the European Union's AI Act, Meta's Frontier AI Framework, the International AI Safety Report and more.

“We encourage everyone to attend because AI isn’t just for tech experts; it’s for everyone. Whether you’re curious, concerned, or eager to explore its possibilities, these meetups are designed to help you navigate the opportunities and challenges AI presents,” Laird said.

“AI literacy is the new digital literacy, and staying informed is so important in this new AI ‘Wild West.’ That’s why we welcome anyone interested in learning, questioning and growing alongside a community of learners.”

Laird has presented at the [Menomonie Area Chamber of Commerce Skill Booster Series](https://www.menomoniechamber.org/skill-booster-series/) and nationally on the impacts of generative AI and the advancements of AI in search and information summarization, known as generative engine optimization.

“This will greatly impact fields like web managing, marketing, user experience and content development. My research and presentation help folks prepare for a new reality and to start thinking about how we design content that gets picked up by AI,” she said.

“UW-Stout's comprehensive approach to AI integration is central to preparing all students for a technology-driven future. Through strategic collaborations across campus, with alumni and industry partners, we are setting a new standard for AI literacy and workforce readiness.”