AI is moving fast. This expert panel shares how students can outrun it.

Insight

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Stepping into the world of artificial intelligence can feel a bit like stepping onto a freeway: everything is fast, everything is loud, and everyone seems to be traveling at a different speed. Students often feel like they're watching traffic rather than driving in it. That's exactly why the College of Computing at Illinois Institute of Technology hosted a panel discussion called *"Explore your future in artificial intelligence: mentorship, careers, and next steps"* – an evening designed to slow the pace just long enough for students to hear grounded, candid guidance from leaders across industry, research, and enterprise.

Moderated by **Dean Nicole Beebe** and hosted by **Assistant Dean Erika C. Burt**, the panel assembled a powerhouse group representing some of the most influential corners of the AI ecosystem:

- **Justin Greis**, Chief Executive Officer of acceligence
- **Paige Kinsley**, Education Outreach Lead, Argonne Leadership Computing Facility
- **Arpit Gangrade**, Director of Data & AI Engineering, CCC Intelligent Solutions
- **Milan McGraw**, Head of Generative AI & Machine Learning, AWS

What followed was a refreshingly transparent conversation about the future of AI work – not just the technical pathways, but the human skills, ethical constraints, and learning habits that will define tomorrow's AI leaders.

This article was prompted, written, and edited by Justin Greis and Nicole Beebe.

Please see final note at the end of of the article for acknowledgement on the role of AI in the production of this article.

Setting the stage

Artificial intelligence is reshaping the workforce at a pace that rivals the most disruptive technological shifts in history.

For students, educators, and early-career professionals, this pace can be both invigorating and disorienting. The panel created a rare moment of clarity – stripping away hype in favor of practical, experience-grounded wisdom.

Across the dialogue, several themes emerged with striking consistency. Rather than treating AI as a narrow technical discipline, the panelists painted a picture of a future where curiosity, adaptability, communication, and ethical judgment become just as essential as code.

Here is a deeper look at the key ideas that surfaced throughout the night.

1. AI careers aren't defined by job titles – they're shaped by curiosity, fundamentals, and alignment

One of the biggest misconceptions students carry is the belief that AI careers hinge on picking the "right" title. Data scientist, ML engineer, prompt engineer, AI researcher – the menu keeps growing, and students often feel pressure to pick a lane before they've even taken their first on-ramp.

The panel dismantled that assumption.

A broader ecosystem than most students realize

Arpit Gangrade offered a detailed look at how AI actually operates inside a modern enterprise like CCC Intelligent Solutions. Rather than a single role, AI work spans an entire chain of interdependent capabilities – including:

- **Data engineering:** building the pipelines, warehouses, and frameworks that feed models
- **Data science:** designing and training models using statistical and ML techniques
- **Model evaluation and calibration:** testing, validating, and fine-tuning models for real-world performance
- **AI/ML engineering:** deploying, scaling, and maintaining models in production
- **Cloud engineering:** managing the infrastructure that powers training and inference
- **Domain expertise:** bringing industry-specific knowledge that shapes meaningful use cases

Arpit emphasized that *"AI is not just about building or training models."* It requires an ecosystem of roles – and many of those roles are accessible to students with varied backgrounds, not only traditional computer science pathways.

Talent is best directed by passion, not pressure

Justin Greis expanded this idea by reframing career decisions around passion and capability. His two-by-two matrix – mapping things you're good at against things you love doing – resonated deeply with students. His message was blunt but freeing: the upper-right quadrant, where skill and joy intersect, is where meaningful careers are built, and

happiness flows.

Just as important was the warning: being great at something you secretly dislike is the most reliable path to burnout. Especially in a field evolving as quickly as AI, students should choose pathways that energize them, not just impress others.

The takeaway: AI is too broad to be navigated by job titles alone. Students should explore widely, follow their curiosity, and build depth in the areas that align with both their strengths and their enthusiasm.

2. Early-career professionals hold the advantage in a rapidly shifting landscape

Students often worry that AI will automate away the jobs they're preparing for. The panelists pushed back – *hard*.

Younger professionals are already wired for this moment

Justin pointed out that early-career talent is often *"more qualified for the jobs of tomorrow than the people writing the job descriptions."* Students entering the workforce now grew up with digital-first instincts, gained fluency with tools earlier in life, and adapt more naturally to rapid-change environments.

In an era where tools evolve weekly – sometimes hourly – learning and adaptability are competitive advantages, not consolation prizes.

AI turns individual contributors into system managers

Paige Kinsley reinforced this generational advantage from the perspective of a national lab. AI accelerates work dramatically, but that acceleration shifts responsibility from doing tasks to overseeing them. Even if AI drafts the first pass, humans must still:

•evaluate correctness
•interpret results
•check assumptions
•validate logic
•understand domain implications

As Paige noted, this shift effectively makes every practitioner a manager – not of people, but of intelligent systems. The students who learn to supervise AI thoughtfully will thrive.

A field where learning beats seniority

And then there's velocity.

Milan reminded the audience that new tools are appearing faster than organizations can absorb them. *"Tools are dropping by the hour,"* he said. That means experience with a large set of outdated tools is far less valuable than the willingness – and ability – to learn new ones.

In this environment, the early-career professional often isn't behind at all. They're the ones keeping pace, if not setting it.

3. Fundamentals, communication, and interdisciplinary skills are the real force multipliers

With powerful AI tools at their fingertips, students can be tempted to let models handle the heavy lifting. The panel urged caution.

Fundamentals will save you at 2 a.m.

Milan was unequivocal: yes, you can use AI to write most of your code – but you still need the fundamentals. When a model hallucinates, breaks your logic, or fails in production, debugging requires:

•linear algebra
•probability and statistics
•strong logic and reasoning skills
•understanding how models tokenize, evaluate, and recall
•knowledge of how context windows, inference patterns, and embeddings work

These fundamentals are no longer optional. They're the guardrails that prevent small mistakes from cascading into large failures.

Communication is no longer a "soft skill" – it is a professional infrastructure

Strong AI practitioners aren't just coders or researchers; they're translators. Milan framed it perfectly: *"In AI, you're always selling."* Selling ideas to leaders. Selling decisions to peers. Selling clarity to stakeholders who don't speak in technical terms.

Paige echoed this from the research perspective. The scientists and engineers who rise fastest are the ones who know how to tell the story of their work – how they tested a hypothesis, what they observed, what it means, and what should happen next.

Interdisciplinary collaboration is now table stakes

Because AI touches every domain – healthcare, policy, law, biology, energy, risk, finance – students who can communicate with experts outside their field gain enormous leverage. The best AI practitioners will increasingly be connectors, not just narrow specialists.

4. Ethics, responsibility, resource usage, and societal impact are career catalysts

As AI systems permeate more of society, ethical reasoning is becoming a core professional skill.

Fairness, transparency, and determinism

Arpit described the growing need for roles that enforce responsible AI design:

•data privacy officers
•bias evaluators
•sensitivity analysts
•fairness specialists
•model governance leads

He explained that enterprises expect models to behave consistently no matter where they run – whether in Chicago, Los Angeles, or anywhere else. Ensuring this determinism requires careful data curation, structured evaluations, and ongoing bias audits.

AI’s environmental footprint

Paige introduced a dimension often missing from the broader public dialogue: resource usage. Argonne’s AI-focused HPC systems, like the Aurora supercomputer, deliver astonishing capabilities – but they also consume significant energy. Her challenge to students was simple but profound: *“just because a model can be built doesn’t mean it should be built.”* Technical acceleration must be balanced with environmental stewardship, scientific necessity, and societal benefit.

Ethics is not an extracurricular – it is a professional identity

In a world where AI influences everything from hiring decisions to healthcare outcomes, ethics is not a sidebar conversation, nor can it be tacitly assumed. It is foundational to building AI systems that are safe, fair, transparent, and aligned with human values. It must be discussed, taught, valued, and reinforced at every level, or you may find yourself building the next *model of mass destruction.*

5. The strongest preparation is doing – building, breaking, contributing, and learning in public

If the panel had one unified message, it was this: *build.*

Build early, build often, build imperfectly

Milan's stance was unambiguous: *"Stop collecting certificates. Start building stuff."* Certificates can reinforce learning, but employers want evidence of real-world problem-solving.

His advice:

•Build prototypes
•Experiment with models
•Break things on purpose
•Fix things you didn't mean to break
•Publish everything – even failed attempts – on GitHub or a blog

One imperfect project that solves a real problem is worth more than a dozen polished certificates.

Experimentation is the new résumé

Paige encouraged students to treat modern AI tools as creative playgrounds. Try different models. Test different techniques. See how they behave under stress. Observe what they get wrong. Learn through friction, not just through instruction.

Momentum matters more than mastery

The students who build consistently – who learn publicly, reflect openly, and iterate relentlessly – are the ones who will lead the next wave of innovation.

What's next: future-proofing your path in AI

The panelists didn't just diagnose where AI is headed – they offered a roadmap for how students and early-career professionals can thrive in a field that evolves by the day. These principles aren't abstract or theoretical; they're the habits and mindsets shared by people who are already operating at the forefront of AI. Think of them as the practices that will keep you not just employed in the AI era, but genuinely ahead of it.

1. **Explore broadly, but anchor deeply**

   The AI universe is massive. Explore it with curiosity, but build depth where your passion and talent naturally intersect.
2. **Treat fundamentals as long-term assets**

   Tools change quickly. Core reasoning, mathematics, problem solving, and evaluation techniques do not. Master them.
3. **Build publicly and visibly**

   Prototypes, repos, and reflections signal initiative and capability in a way no certificate can.
4. **Elevate communication as a strategic skill**

   Clear explanation, persuasion, leadership, and storytelling amplify your technical influence.
5. **Make ethics part of your professional identity**

   The world is trusting you with powerful tools. Treat that responsibility with rigor and foresight.

Acknowledgment

We extend sincere appreciation to the speakers, hosts, students, faculty, and staff who made this event possible. Your honesty, expertise, and generosity offered a roadmap for the next generation of AI practitioners – and demonstrated how thoughtful, ethical leadership can shape the future of an entire field.

Final note: on transparency in AI-augmented authorship

This article was developed through a collaborative, iterative process that combined human judgment, expert interpretation, and AI-assisted drafting. As norms around AI-augmented writing continue to evolve, we believe that being forthright about how these tools are used is part of responsible authorship.

In this case, AI served as a partner in synthesis: helping organize ideas, surface thematic patterns, and refine language, while the direction, structure, emphasis, and final decisions remained human-driven. No automated system was allowed to stand on its own without review, and every key idea was evaluated against the actual content of the panel discussion.

Our guiding principle behind the approach: AI can enhance clarity and efficiency, but it should never obscure authorship or replace accountability. Transparency and traceability are not about revealing every internal step – it's about acknowledging the role of AI thoughtfully and honestly, and ensuring that human oversight remains central to the work.

As the conventions around AI-supported writing mature, we hope this level of openness offers a balanced model for academic, industry, and public communication alike.