AI4ALL’s Work During the 2022-2023 Academic Year
The explosion of access to generative AI tools is changing the way business is conducted across every vertical, and is affecting day-to-day life, as well. According to Gartner, by 2024, 40 percent of enterprise applications will put conversational AI to use, up from less than 5 percent in 2020. And consumers won’t just be talking to chatbots – by 2026, 60 percent of the design of new websites and mobile apps will be handled by generative design AI.

But these new tools can carry the same biases as their developers and engineers, so it is imperative the people building them reflect the consumers and business customers they serve. Without a richly diverse pipeline of new talent trained in human-centered, inclusive AI, the tools being developed in this technological moment run the continued risk of hurting humanity rather than benefiting it.

The industry is ripe for change. McKinsey’s State of AI 2022 Report revealed that fewer than 25 percent of AI employees identify as racial or ethnic minorities, with only a third of companies having active programs or initiatives to increase diversity in the field. Moreover, the Stanford Artificial Intelligence Index Report 2023 shows women and people of color are deeply underrepresented in the AI space, with about 75.9 percent of computer science, computer engineering, and information faculty members being men, with only 22.3 percent of computer science bachelor's degree recipients being female. Only 19.32 percent of CS bachelor’s degree recipients are Black, Latinx, Indigenous, or of mixed racial backgrounds.

AI4ALL’s work to create AI Changemakers – the inventors, pioneers, and visionaries who will ensure AI becomes a tool for a human-centered future – is critically important. By equipping these students with responsible AI skills and the social capital they need to succeed in the field of AI and machine learning, AI4ALL is establishing the workforce humanity needs.

The fast-paced changes in tech also necessitate a flexible and ever-changing approach to ensure these students get the right support at the right time to achieve their goals. This report, which comprises the 2022-2023 academic year, gives a glimpse into how we leveraged three programs, Discover AI, Apply AI, and Talent Edge, to provide opportunities for the students we serve to thrive. But–like the AI field itself—the strategy behind the programs has also already evolved, making way for what’s next for AI4ALL’s programming.
As students participate in AI4ALL’s work, they experience shifts in how they view not just AI and machine learning, but their own career paths. Here are some ways in which AI4ALL’s programs have shaped the career trajectories of the students we serve.

DeMarko Fulcher: Harnessing Hopes, Assets for Realizing Dreams

AI4ALL was DeMarko Fulcher’s introduction to artificial intelligence, though he had explored an interest in computer security before ever hearing about the organization. He first encountered AI4ALL when he participated in one of the high school summer programs the organization used to run in conjunction with university partners.

Fulcher is currently a senior at University of Maryland, Baltimore County, where he is majoring in math and statistics, with a computer science minor. There, he participated in Talent Edge so he could hone his technical interviewing skills for his post-graduate job search. “My dream job is to get into the National Security Administration’s (NSA) Mathematician and Mathematical Statistician program,” he said.

Talent Edge helped Fulcher get a more solid footing in the skills he needs to showcase what he’s learned during college. “Talking to people who’ve been in my shoes and seeing the process, the problems they’ve gone through and how they’ve overcome them,” he said. “It’s giving me a little bit more hope and also more resources I can use to help myself.”

Kesia Oliveros: Building AI Competence and Confidence

Kesia Oliveros, a senior at Florida International University, participated in all three of the AI4ALL programs available through FIU – Discover AI, Apply AI, and Talent Edge – during the 2022-2023 academic year. The experience was one of the best of her college career in terms of helping her grow, she said, and now she is considering master’s programs with data science research components.

The coaching and mentoring she received during Talent Edge, she said, also helped her feel confident that she knew how to present her experience in ways that would result in landing a role in the field. “I was a really good cake with no frosting – they really helped me put the frosting on my resume,” Oliveros said. “I’ve gotten interviews after that because my resume got so much better after that review.”

Oliveros said she would absolutely recommend AI4ALL’s programs to anyone else at FIU, because she learned so much during such a valuable experience. “Everything I achieved, I understood why. I never felt imposter syndrome. I definitely feel like I could work in the field.”
Zainab Akinjobi: Using AI to Make an Impact in Healthcare

Zainab Akinjobi recently started a role as a senior statistician with UC Davis Health, a role that she landed thanks to her participation in AI4ALL's Talent Edge. Her work in that program helped sharpen her responses to interview questions, which helped her succeed as she sought out her new role.

Akinjobi took part in AI4ALL's programming while finishing her master's degree at New Mexico State University. Discover AI and Apply AI are where Akinjobi got her first experience in machine learning, which she said is still somewhat underutilized in the health statistics space. She experienced coding in Python, and discovered how many datasets and resources were available to help her grow in the discipline. The learning sparked her interest, and she is excited to push her skills further as she begins her career.

"I was able to learn so many algorithms," she said. "I'll look at how to incorporate artificial intelligence in most of the projects that I'm going to be taking on."

"I was able to learn... where [interviewers are] coming from, what they're trying to test when they ask questions instead of just answering the questions point blank."

— Zainab Akinjobi

How Talent Edge Served Our Students

In Spring 2023, participants in AI4ALL's Talent Edge pilot program, which helped prepare them for landing internships and entry-level roles in AI and machine learning, had the following to say about their experiences:

Students agreed that as a result of participating, they

- Improved their resumes
  - 89.8%
- Improved their elevator pitches
  - 89.8%
- Belong to a community of peers in AI
  - 87.8%
- Have a network to help navigate a career in computer science or AI
  - 79.6%
- Accepted a position within four months
  - 61.7%

Students are surveyed annually post-program and are part of our alumni community, giving them access to a targeted AI job board and networking opportunities.

BRINGING AI CAREERS INTO FOCUS

Cody Glickman, AI4ALL Instructor and Curriculum Developer, joined the organization's team in Fall 2022, teaching Discover AI and Apply AI. He was specifically interested in AI4ALL's focus on responsible AI and ethics. Glickman talked about the way students improved critical thinking during his classes while building skills that would serve them well in their chosen careers.

"Getting their foot in the door in machine learning will enhance their career prospects exponentially," Glickman said. "Their earning potential dramatically increases with some machine learning on their resume. That's good for them personally and for the industry as a whole to avoid socioeconomic and cultural biases that people might not be aware of unless you have people with more diverse backgrounds.

TALENT EDGE

TOTAL STUDENTS DURING THE ACADEMIC YEAR:

FALL 2022  SPRING 2023
N/A  61

15% Identified as BLNA*
3% = BOTH

41% Identified as Women or Nonbinary

*BLNA = Black, Latinx, or Native American/Indigenous

Students are surveyed annually post-program and are part of our alumni community, giving them access to a targeted AI job board and networking opportunities.
During the 2022-2023 academic year, AI4ALL’s Discover AI and Apply AI programs allowed students to bridge technology and other disciplines in innovative ways. By introducing them to AI concepts, AI4ALL’s programs inspired students to think about how the practical application of AI could enhance socially beneficial work they already were interested in doing.

Joshua Andazola: Blending Business With AI

Joshua Andazola, a Technology Consultant at PwC, was an accounting and information systems major at New Mexico State University when he participated in AI4ALL’s Discover AI, Apply AI, and Talent Edge programs. He had begun to study machine learning the prior semester, but still learned a lot during Discover AI, he said.

“Even as someone who was a typical business student, I still found it pretty interesting,” he said. “I saw it as something that is going to be very prevalent moving forward in our society.”

A lead software engineer from Capital One came to speak to his cohort, which Andazola said gave him excellent perspective. “I’m very interested in how these models can impact business and the financial industry,” he said.

When it came time to interview with PwC, Andazola said his AI4ALL experience gave him the confidence he needed to land the role. “I think that really gave me a step up,” he said. “I was able to talk about how these models worked, what would be needed to implement them, and how businesses can take advantage of this new technology.”

“I think [AI4ALL] really gave me a step up.”
— Joshua Andazola
Nathaniel Fernandes: Bridging Technology and Healthcare

Nathaniel Fernandes, a senior at Texas A&M University, has a dream of leveraging engineering and medicine to create devices that save patients' lives and help doctors deliver the best care. He comes from a family of medical professionals, but said beyond that, he's deepened his understanding of how critical good health is to success in other facets of life. “People carry their health everywhere, and it’s central to anything that you want to do,” he said. “If you can preserve your health and if you have good health, then you can do anything else in life.”

Fernandes wanted to learn how AI and machine learning could support his goals, so he applied to and was accepted into the Discover AI program at A&M. There, he learned foundational concepts that, during his participation in Apply AI, allowed him to develop Sherlock, a novel tool to help doctors find information in their medical records. “Doctors have to be detectives, and they have to search through potentially hundreds or thousands of documents,” he said. “The idea was to use natural language processing to extract that information much more quickly and cost-effectively.”

Fernandes submitted the project to the Raymond Ideas Challenge through the university’s McFerrin Center for Entrepreneurship, and achieved finalist status in that competition. But Fernandes also said he now has a network that will allow him to achieve more in the field. “If I start my own company and then I want to hire talented individuals, I don’t have to look at the whole wide world;” he said. “I could go directly to [AI4ALL] and be like, ‘Hey, can you give me some referrals for some talented people?’”

How Discover AI Served Our Students

During the 2022-2023 academic year, participants in AI4ALL’s Discover AI program, which offers a hands-on introduction to computer science and AI, ethical issues surrounding AI implementation, and tech careers, had the following to say about their experiences:

<table>
<thead>
<tr>
<th>Fall 2022</th>
<th>Spring 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Said they were able to have an informed conversation about how algorithmic bias impacts society</td>
<td>29.1%</td>
</tr>
<tr>
<td>Felt Discover AI provided a valuable learning experience</td>
<td>90.8%</td>
</tr>
</tbody>
</table>

How Apply AI Served Our Students

During the 2022-2023 academic year, participants in AI4ALL’s Apply AI program, which built on Discover AI to guide participants to develop technical skills and build an AI portfolio, had the following to say about their experiences:

Of students who participated in Apply AI and provided feedback on their experience

<table>
<thead>
<tr>
<th>Fall 2022</th>
<th>Spring 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressed increased interest in learning more about AI</td>
<td>100%</td>
</tr>
<tr>
<td>Said they were interested in pursuing a major in CS or AI</td>
<td>100%</td>
</tr>
<tr>
<td>100%</td>
<td>85.0%</td>
</tr>
</tbody>
</table>

*BLNA = Black, Latinx, or Native American/Indigenous

**Identified as Women or Nonbinary**

128

Of students who participated in Apply AI and provided feedback on their experience

<table>
<thead>
<tr>
<th>Fall 2022</th>
<th>Spring 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Said they were interested in pursuing a major in CS or AI</td>
<td>100%</td>
</tr>
</tbody>
</table>

*BLNA = Black, Latinx, or Native American/Indigenous

**Identified as Women or Nonbinary**

128

Of students who participated in Apply AI and provided feedback on their experience

<table>
<thead>
<tr>
<th>Fall 2022</th>
<th>Spring 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Said they were interested in pursuing a major in CS or AI</td>
<td>100%</td>
</tr>
</tbody>
</table>
Princess Thomas: From Learner to Leader

Princess Thomas, a junior at the University of California, Merced, participated in both Discover AI and Apply AI before becoming a student coordinator for other students participating in AI4ALL’s programs. In that role, she serves as a support system for newer students, ensuring they’re getting the most they can out of their experience. That peer-to-peer mentorship is critical to student success in the programs.

“I think the exciting part is seeing the students do the actual project itself and bringing their research to life,” Thomas said. “I really am interested in finding a job where I can work with a team and bring a project we made to life.”

Thomas’ group project during Apply AI was to create a Shazam-like app that went beyond just identifying a song to suggesting songs that share a similar sound or vibe. She described the experience as a little bit stressful, but mostly fun, especially figuring out how to apply machine learning tools and finding the right dataset to use. The experience whetted her appetite for more.

“I’m really excited to just see where I go and where this is going to take me,” Thomas said. “I want to do something that would bring an impact to the world. Technology is always growing, and I want to be a part of that change.”
Changemakers Thrive Through Community

Members of our Changemakers in AI community build community and belonging, receive AI internship, mentorship, and research opportunities, and career readiness support. AI4ALL’s Changemakers Connect platform offers a place for alumni to reconnect and utilize the trusted AI4ALL environment to expand their professional network.

Demographics

Here are AI4ALL’s demographics for students who participated in one or more programs during the 2022-2023 academic year.

TOTAL DEMOGRAPHICS

537 Students

49% Identified as Women or Nonbinary Students

17% Identified as both*

*Black, Latinx, or Native American/Indigenous AND Women or Nonbinary

44% Identified as Black, Latinx, or Native American/Indigenous

TOTAL NUMBER OF CHANGEMAKERS IN AI:

1,784

ACTIVE ON CHANGEMAKERS CONNECT

888
What’s Next?

In Spring 2024, AI4ALL will host its first cohort of students in AI4ALL Ignite. This new program, which will replace the Discover AI, Apply AI, and Talent Edge models, is a no-cost virtual accelerator that provides undergraduate students the opportunity to work on an AI portfolio project with mentorship and guidance from AI industry experts, participate in a student symposium to showcase their work, and gain extensive practical training in career readiness and the technical AI internship interview.

The program provides special opportunities centered around the unique experiences and needs of Black, Latinx, Indigenous, women and non-binary students working toward careers in AI and machine learning. Students enrolled in AI4ALL Ignite will gain skills that will set them apart in the AI internship application process, learn to implement a responsible AI framework, and build a strong network of peers and AI practitioners while simultaneously fostering an environment of inclusion.

AI4ALL Ignite will ensure students who want to create a more inclusive, human-centered discipline in AI can achieve their goals.

“AI4ALL Ignite was born out of the experience we’ve gained over the last six years working to make professional roles in AI more accessible to students who don’t see themselves represented in the greater tech community.”
— Sean Peters, Vice President of Programs and Operations, AI4ALL

Join The Movement

HIRE A CHANGEMAKER

Your organization can draw from AI4ALL’s community of diverse changemakers across a variety of disciplines. If you are looking for an intern or fellow in AI, ML, CS, or data science, our alumni serve as a rich pool of talent and opportunity.

PARTNER WITH US

AI4ALL sponsors get access to an uncompromising pipeline of early-career technologists who will strengthen their teams, products, and business outcomes. Demonstrate your commitment to diversity and inclusion at your company by joining us as a partner.

SHARE YOUR TIME

Your time, mentorship, and expertise can directly support students finding their pathway into the fields of AI and ML. We are always especially seeking volunteers who come from non-traditional backgrounds, and/or with whom our students identify.

FUND OUR WORK

By supporting our education and career opportunities for young people around the U.S. with a donation of any size, you’re ensuring AI has a responsible future in which those creating the technology reflect our society as a whole. If your company matches donations, your individual gift can support twice as many students! You can also choose a non-cash giving option if that better serves your needs. Thank you.
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We partner with AI leaders who are committed to building diversity in the AI pipeline. Join them by becoming an AI4ALL sponsor.

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