High school students and future Changemakers in AI learn with Dr. Angelica Lim, co-director of the AI4ALL Summer Program at Simon Fraser University.
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Who We Are

Artificial intelligence is one of the most important technologies of our time, and it is at risk of benefiting only a few, and harming others because of an inequitable distribution of power and issues of gender, race, and other biases encoded in and around AI systems. Even if we fix the data and hire a diverse workforce, it won’t be enough to address the systemic issues in AI. We need to change who can be a leader in AI.

In 2019, 1% of all job listings in the US were AI-related, triple the number of AI jobs in 2010. These jobs exist across a variety of fields, reflecting the fact that an interdisciplinary effort will be needed to integrate AI into all of the areas of our lives that it stands to benefit. Yet students have unequal access to the preparation needed to even enter these fields.

Only 45% of U.S. high schools offer any kind of computer science education. At high-poverty schools, which are more often attended by Black and Indigenous students of color, only 26% of students get computer science education exposure.

This gap leaves a tremendous number of students whose talent and creativity could benefit the AI field, but who, without intentional support and opportunity, get excluded. AI4ALL’s programs use what we know works to support those students to share their brilliance and drive: They can enter an AI-related field, major in it, and persist within that major.
This sets them up for success in a work environment that has traditionally offered them few role models or relatable mentors. AI4ALL’s work creates a community and a set of resources they can lean on throughout their journey.

AI4ALL has created a unique path for students, especially those who have been historically left out of the field. Research has shown us how important it is to support students at both the high school and college levels so they remain engaged, and we leverage that data to provide robust resources for high school and college students to develop, learn, and grow.

AI4ALL is one of the few computer science or AI education organizations that works with both industry leaders and academic experts to provide relevant and rigorous AI content for our students. In a field that is so rapidly evolving, we’ve learned that it is absolutely crucial to leverage cross-sector leadership to make meaningful, sustainable change.

What Does Leadership In AI Look Like?

Leadership in AI can take many forms:

TECHNOLOGICAL
Creating or advancing the technical solutions that address today’s biggest problems

SOCIAL
Influencing how we make decisions about AI systems through ethics, fairness, education, and more

POLITICAL
Creating and advocating for AI regulation and related policies

BUSINESS
Influencing how businesses use and adopt AI
“With a technology as powerful and exciting as AI, let’s not let the past define who we are. We CAN solve this if we work together, with humility, determination, and hope that a new story is possible. We owe it to ourselves and to the future generations.”

TESS POSNER
CEO, AI4ALL

Every AI4ALL program includes material that helps students grow their understanding of AI through an ethics and societal impact lens. They learn with their peers and from a diversity of role models, and hone critical leadership skills like confidence, communication, influence, and perseverance.

As students move through our programs, they develop a passion for AI, an identity within the discipline, and a sense of belonging within the community of practice that comprises AI technologists. They arrive in the industry ready to lead, both as technologists and as humans.

How do we know this approach works? We track student progress against immediate, turning-point, and long-term outcomes. Our data shows students become more confident, feel an increased sense of belonging in the field, enroll in post-secondary computer science and AI programs, and eventually move into AI and related fields.

Not only do we value our foundational and ongoing research, which has been supported by the National Science Foundation and recognized at industry-leading computer science education and AI conferences, but we also share what we learn and our best practices with the broader community.

HOW DO WE KNOW WE’RE SUCCESSFUL?

AI4ALL uses pre- and post-program surveys of students designed in partnership with leading education researchers to understand the program’s impact on participants’ exposure to technical concepts, motivation to pursue AI education and careers, confidence in their abilities, and access to support from mentors and peers.

We use follow-up surveys with alumni to understand how the program impacts education and career outcomes by measuring the number of alumni who major in computer science and work in computer science fields.

We track demographics to ensure we’re reaching our target communities and making a difference where it’s most needed.
Results & Impact

AI4ALL’s long-term vision is to foster a community of Changemakers in AI: diverse leaders across a variety of disciplines who influence AI in a positive direction.

76% of students felt they were a part of a community of people in computer science or AI.

91% of students felt they know a lot about careers in AI.

72% of students said their interest in an AI career increased after they participated in Discover AI.¹

85% of college-age Changemakers are pursuing or plan to pursue a degree in computer science or AI.

2019 COHORTS
Gender²

59% Woman
32% Man
1% Non-binary
1% Another gender
7% Declined to identify

2019 COHORTS
Race & Ethnicity²

28% Hispanic/Latinx
25% Asian
20% Black
10% White
10% Two or more races
<1% Unknown
<1% Another race not listed
6% Declined to identify

¹ 2020 pilot program results. All other data reported on this page pertains to 2019 program results.
² Includes 2019 Open Learning partner schools and Summer Programs/Changemakers 2019 cohort.
As of December 2019, AI4ALL and our alumni have impacted 9,252 young people around the world with approachable AI education.
AI4ALL empowers teachers to equip students for the future.

Through our Open Learning program, AI4ALL provides AI curriculum and resources for high school educators and community members to use in the way that makes the most sense to the high school students they serve. The relevant, approachable curriculum gives them a foundation in AI, builds problem-solving and technical skills, and can be applied in an interdisciplinary way to students’ everyday lives.

In 2019, Jordan Budisantoso, then a computer science teacher at Washington, DC’s Washington Leadership Academy, and his students used Open Learning curriculum in their classroom. Many of the primarily Black and Hispanic/Latinx students at this public charter school come from chronically underfunded areas of the city, which has created an educational achievement gap within those communities.

Budisantoso used the Open Learning program to help his students have conversations about what AI entails and how it works. He knew that having that knowledge would equip them to lead conversations beyond the classroom, see themselves as future leaders in their chosen fields, and understand AI is not just about building or coding, but also about shaping policies and the ethics of technology.

AI4ALL’s work goes beyond just training students to code and building a pipeline of AI technologists. Our work fosters the inspired influencers who can not only identify and solve problems, but who confidently pave the way for others to follow them into the field.
Computer science is a language of power in this country, just like the language of business or the language of law. Those who understand it shape our world, and those who don’t are subjected to the influence of those who do understand it.
In 2019, AI4ALL offered Summer Programs at 11 universities, directly serving nearly 300 students who completed AI projects on issues impacting themselves and their community. These programs recruit students who have been historically excluded from AI education, creating a richer set of potential leaders and thinkers who can drive a more inclusive, ethical, and creative approach to technology.

For example, in 2019, the Summer Program at Carnegie Mellon University (CMU) accepted five students from the El Paso, Texas area. That group of students not only successfully completed the CMU program, but went on to advocate that the University of Texas at El Paso (UTEP) should launch an AI4ALL Summer Program, bringing more high-quality AI education to the predominantly Hispanic-serving institution. Their effort was successful, and the program welcomed students for a summer session in 2020.

“In only three short weeks, students leveraged their engagement with instructors and faculty to really take a deeper dive in the realm of artificial intelligence,” said Jonathan Reynolds, Sr. Outreach Project Manager at CMU. “My favorite moments of the experience occur after the pre-college institute when students keep me updated about the amazing colleges that they were admitted to and their desire to study CS or AI as an academic discipline.”

Exploring AI concepts expands Summer Program students’ realities. When Kasar P., who participated in the Princeton University AI4ALL Summer Program in 2018, he not only discovered a world outside of New York City’s Bronx neighborhood, where he was born and raised, but also met fellow students with similar interests but very different life experiences.

Even as a high school student, Kasar has shown himself as a STEM leader in a university setting through internships at the City University of New York’s (CUNY) Advanced Science Research Center. He started by developing CO2 sensors to monitor ambient air quality on the CUNY campus. That work led to the creation of the center’s new Citizen Sensor Lab, which helps high school students and undergrads build and deploy sensors to track air quality data across the city.

From inspiring student advocacy on behalf of other students to galvanizing real-world problem-solving, AI4ALL’s Summer Programs are developing leaders who create change long after they return home from their three-week experience.
There’s a world outside of the world I’m living in.
We support students with lifelong mentorship.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
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<tbody>
<tr>
<td>88%</td>
<td>AI4ALL Alumni who feel they are part of a community in AI and computer science</td>
</tr>
<tr>
<td>85%</td>
<td>AI4ALL Alumni who are majoring in or plan to major in Computer Science</td>
</tr>
</tbody>
</table>

Our AI4ALL alumni program, Changemakers in AI, grew to 548 students in 2019. Alumni learn through career development opportunities, lead as they build a community of peer practitioners in AI, and connect their community with each other and with professionals in the field.

Carlos A., who attended the Arizona State University AI4ALL summer camp, was so moved by his experience he stepped in to lead one of AI4ALL’s six alumni chapters during his senior year of high school. Along with his co-leader, Carlos led monthly discussions about AI projects the chapter members were researching and coding, and their plans for future school and career choices, and even organized a virtual activity research fair to share more detail about chapter members’ work.

“Every member of Changemakers in AI goes on to educate an average of 13 more students about AI and its possibilities.”

“You get to meet these impressive people that you could never even think about,” Carlos said. “They pushed me my senior year to stand out in my college applications.” That inspiration led Carlos to earn a spot at his dream school, and he is entering Stanford University’s class of 2024.

Carlos, and our hundreds of other alumni, are breaking down societal barriers, both within the AI4ALL Changemakers community, and in the communities where they live, learn, and work. Connecting through the Changemakers in AI program provides them the support, peer connection, and resources to truly build community while transforming our world.

How Changemakers In AI Connects the Community

- Chapter leads encourage belonging and plan activities.
- AI4Impact grants support alumni as they create their own outreach programs.
- Careers in AI provides skill-building opportunities to alumni through workshops and internships.
- Mentor AI connects people in the field with our students.
Bringing together people raised in different states, cities, families, and environments creates pieces to a mosaic, which comes together beautifully when ideas are shared, discussed, tested and ultimately implemented.
In 2020, AI4ALL launched College Pathways, an initiative designed to spark interest and increase persistence in AI-related careers for college students. The initiative is particularly designed to support Black, Indigenous, Hispanic/Latinx students, first-generation college students, low income students, trans and non-binary students, and cisgender women.

The programs that comprise the initiative support students as they become leaders in AI and complement what they are learning in the classroom. With the support of College Pathways, students develop a societal impact lens and apply AI to their existing areas of interest—whether that’s public policy, healthcare, tech, or another discipline.

Through College Pathways’ programming, students build professional skills and get access to internships while connecting with a community of like-minded technologists. Students also participate in Discover AI, an immersive workshop that introduces them to the field; teaches them about algorithms, data, and AI ethics; and offers access to experts who can answer their questions about AI and how it’s used.
I loved learning everything about AI and what is used to create it. I feel like my knowledge in AI has deepened and I feel like I could see myself working in this field in the future.
Part 2

Where We Are Now

As our society grapples with tremendous challenges—systemic racism, economic and social inequity, climate change, a pandemic that highlights significant cracks in our healthcare infrastructure—AI could benefit humanity, but it has the potential to either solve the very real problems we’re facing, or, without care, to exacerbate those concerns.

AI can play a big part in creating solutions, but for those solutions to result in positive social change, we need AI’s leaders to ensure everyone in our society benefits. Changing the AI field’s power dynamics so they reflect racial, gender, and economic equity is complex, systemic, and necessary work.

42%

Alumni who started AI/computer science projects, programs, or organizations in 2019
The benefits of this work ripple outward. Students who participate in AI4ALL’s programs discover new ways to change the world around them. Students take initiative to work on projects like apps that use machine learning to help visually impaired people navigate their environment; or apps that use AI to diagnose sickle cell disease.

Our students also serve as inspiration and mentors for others coming up behind them. For every one AI4ALL alum, they go on to educate 13 more on average, and reached more than 2,500 youth through their own AI and CS outreach and education initiatives during 2019 alone.

For example, 2017 Stanford AI4ALL graduate Stephanie T. of Salinas, CA, had a vision of an AI and computer science club at her high school. She founded that club and worked with the Salinas Union High School District to incorporate similar clubs around the district. And, in 2017, a team of three AI4ALL alumni from Arkansas, Arizona, and Utah founded Allgirlithm, which offers community for girls interested in AI—particularly those living far from tech hubs—and an international AI curriculum, and continues to flourish today.

Creating big social change requires tremendous creativity and talent. By developing that talent in AI4ALL’s students, we’re setting them up to change technology’s future.
Responding to COVID-19

The COVID-19 pandemic caused unprecedented challenges for our programs and the students and teachers we serve. As we responded to the crisis, our top priority was the health and well-being of our students, program teams, faculty, and partners.

Our networks, relationships, and connectedness are truly our greatest strength, and we have leveraged those to ensure we can continue this important work in the most inclusive, equity-centered way possible.

**WE PIVOTED** swiftly and effectively to hosting 14 AI4ALL Summer Programs virtually during summer 2020, serving over 350 students. We worked with each partner university as they rolled out strategies that still built community, fostered interaction, and strengthened each student’s belief in themselves, their peers, and their intellectual capacities.

**WE SUPPORTED** our over 750-member Changemakers community as they continued connecting with each other and building their skills online.

**WE DEVELOPED** a new, free, online curriculum for high school teachers that explores the role AI can play in addressing the COVID-19 pandemic.

**WE EMPLOYED** more than 5% of our alumni as Summer Program teaching assistants, which helps those alumni solidify their AI knowledge, gain valuable teaching experience, and connect with the newest students in our AI4ALL community. The COVID-19 pandemic has reduced students’ access to internships, which are critical to building the experience necessary to land jobs in the field after they graduate from college.

**WE LAUNCHED** a student stipend program, which in 2020 provided over $22,000 of wrap-around financial support to help students with non-tuition costs like housing and technology. This fund was launched in response to the pandemic, but also will continue in future years — AI4ALL recognizes COVID-19 merely exacerbates long-standing inequities in income, housing, access to tech, and employment for many of our students and their families.

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Some of the Questions We Asked as We Addressed Program Changes in Light of COVID-19

How do we responsibly design programming that centers inclusion?

What are we learning this year to increase equity now and in our future?

How are we creating an abundance of opportunities for students to engage with each other?

How are we providing support to our instructors so they are set up for success?
Part 3

What’s Next

AI4ALL is continuing to build out a pathway for students that begins with awareness and engagement, gives them the tools they need to solve problems close to home and globally, and helps them persist and lead in a cutting-edge and impactful field.

As students from many different backgrounds explore technology’s potential to benefit their communities and the larger world around them, they will emerge as leaders passionate about applying AI to our most pressing social problems and creating tremendous change for good.

As we develop and launch each new AI4ALL initiative and program, we are guided by this principle: we want to create leaders who can influence AI in a positive direction, and maximize the potential for equitable benefits. In this way, we will change the field of AI even as it continues changing the world. We will ensure a more diverse set of AI leaders shape our future, benefiting each and every one of us as they do.

COLLEGE PATHWAYS

We’ve learned a lot through this program’s pilot and we will be expanding it to more campuses in the coming year. The range of hands-on activities, expert discussions, and student resources are helping it achieve our goal of providing inspiration and motivation to students who might otherwise be excluded from this important field. In fall 2020, we will pilot our Apply AI program, which will build community and provide a forum for students to pursue more challenging AI projects and build their portfolios.

BYTES OF AI

These short, easily digestible, topic-driven lessons link back to our Open Learning curricula. They’re designed to give high schoolers quick exposure to what AI is and what it can achieve, and to spark an interest in the field.

STUDENT STIPENDS

This program offers financial support for costs — technology, housing, or other needs — that are not covered by Summer Program or other scholarships.
## Financials

### Statement of Activities

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<thead>
<tr>
<th>Revenue</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions &amp; Grants</td>
<td>$4,563,872</td>
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<td>Corporate Sponsorships</td>
<td>$634,220</td>
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<td>Program Services</td>
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<tr>
<td>General &amp; Administrative</td>
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<td>Fundraising</td>
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<td><strong>Total Expenses</strong></td>
<td><strong>$2,261,448</strong></td>
<td><strong>$699,254</strong></td>
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| Change in unrestricted net assets | $1,015,883 | $905,739 |
| Change in temporarily restricted net assets | $1,920,761 | $1,616,484 |
| Net Assets, Beginning of Year    | $2,522,223 | $0 |
| **Net Assets, End of Year**      | **$5,458,867** | **$2,522,223** |

### Statement of Financial Position

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<tr>
<th>Assets</th>
<th>2019</th>
<th>2018</th>
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<td>Cash &amp; cash equivalents</td>
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<td>Contributions &amp; grants receivable</td>
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<td><strong>Total Assets</strong></td>
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<table>
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<th>2018</th>
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<tbody>
<tr>
<td>Without donor restrictions</td>
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<td>$905,739</td>
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<tr>
<td>With donor restrictions</td>
<td>$3,537,245</td>
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<td><strong>Total net assets</strong></td>
<td><strong>$5,458,867</strong></td>
<td><strong>$2,522,223</strong></td>
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<tr>
<td><strong>Total liabilities &amp; Net Assets</strong></td>
<td><strong>$5,553,931</strong></td>
<td><strong>$2,579,417</strong></td>
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Acknowledgments

2019 SPONSORS

$1,000,000+
• Google.org
• Pivotal Ventures

$500,000–$999,999
• Patrick McGovern Foundation

$100,000–$499,999
• Accenture
• Amazon Web Services, Inc.
• BNY Mellon
• Capital One
• EY
• General Motors
• SAS
• Silicon Valley Community Foundation
• SoftBank Group

$50,000–$99,999
• Chan Zuckerberg Initiative
• Microsoft
• Nielsen Company

SUMMER PROGRAM UNIVERSITY LEADS

Dr. Kuai Xu • Arizona State University
Cynthia Brossman • Boston University
Dr. Kate Saenko • Boston University
Jonathan Reynolds • Carnegie Mellon University
Dr. Augustin Chaintreau • Columbia University
Dr. Desmond Patton • Columbia University
Kauai Taylor • Columbia University
Victoria Tswamuno • Columbia University
Dr. Ayanna Howard • Georgia Tech University
Dr. Tamara Pearson • Georgia Tech University
Dr. Ed Felten • Princeton University

TEAM

Tess Posner • CEO
Candice Chung • Chief Financial Officer
Emily Reid • VP, Open Learning
Roshni Kasad • Senior Director, College Pathways
Valerie Allen • Director, Changemakers in AI
Rockelle Morris • Director of Corporate Partnerships
Nicole Halmi • Senior Communications Manager
Sasha Elycia • Operations Manager
Eric Gunther • Program Operations Manager, Open Learning
Shavonna Hinton • Campus Chapters Manager, College Pathways
Sarah Judd • Curriculum Manager, Open Learning
Beth McBride • AI Education & Instruction Manager, Summer Programs
Sean Peters • Curriculum & Instruction Manager, College Pathways
Thalea Torres • Career Development Manager, Changemakers in AI
Camryn Burkins • Communications Associate
Irena Trifunovic • Education Partnerships Associate, Open Learning

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CONTENTS
Join The Movement

In a time when so much is changing so rapidly, we know this to be true: AI increasingly shapes the world we’re facing, but it will cause harm without inclusive, equitable leadership. By supporting our work to expand who can be an AI leader, you can ensure we become a more resilient society, thanks to systems and products that are more creative, responsible, and solve a broader range of problems.

HERE’S HOW YOU CAN HELP

**Fund Future Leaders**

By supporting AI4ALL, you are uplifting new voices and including new perspectives in AI. Your gift ensures first-generation college students, students from lower-income backgrounds, LGBTQIA students, and Black, Indigenous, and Latinx students can take the lead. Everyone can help shape the future of technology. Your donation to AI4ALL ensures we can tell a new story about who can be a leader in AI.

[OPEN FUND FUTURE LEADERS]

**Hire Our Changemakers**

AI4ALL alumni represent top early-career AI talent with a strong technical, critical thinking, and creative foundation. Our high school and college-age alumni have interned and researched at companies and labs like Apple, Fidelity, Google, MIT, NASA, and Stanford.

Through our Changemakers in AI program, we connect alumni with AL/ML internship and employment opportunities. We’re particularly interested in hearing from companies dedicated to supporting a diverse workforce for the AI field.

[OPEN HIRE OUR CHANGEMAKERS]
AI will Change the World.

Who will Change AI?