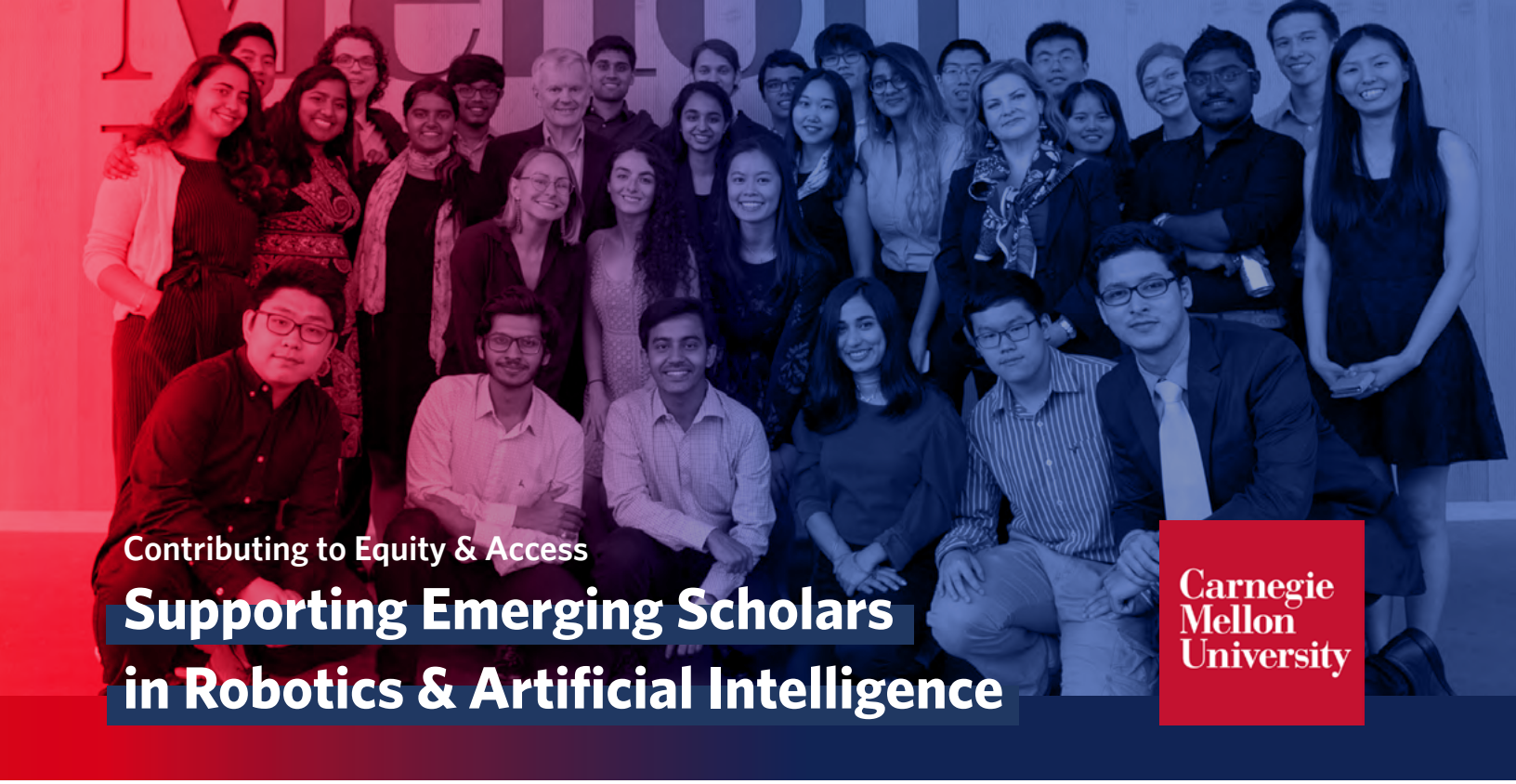

Contributing to Equity & Access

Supporting Emerging Scholars in Robotics & Artificial Intelligence

Carnegie Mellon University

RISS | ROBOTICS INSTITUTE SUMMER SCHOLARS

Carnegie Mellon University sponsors emerging scholars in robotics & artificial intelligence through the Robotics Institute Summer Scholars (RISS) program. The Robotics Institute, part of Carnegie Mellon University's top-ranked School of Computer Science, is the world's first university robotics department, with the world's first Ph.D. in Robotics program, the largest university-affiliated robotics research group, and the top-ranked robotics programs in the world.

Launched in 2006, RISS provides opportunities for students from across the country and around the world to conduct research with CMU leaders in robotics and artificial intelligence. Scholars build knowledge, skills, and a network that will open doors for years to come. Renowned scientists and thought leaders in autonomy, computer vision, field robotics, artificial intelligence PLUS partners across the university in student development, service learning, and student affairs anchor the scholar experience. **Core to the successful outcomes is the RISS Talent Development Model and Funded Graduate Education Pathways Model, which are explored below**.

RISS is a community that cares. It fosters a diverse and inclusive working and learning environment where all students are actively welcomed, included, and supported. We work to create an atmosphere where students can explore and develop their identity as scientists. This is the first step in a mentored journey with the CMU community. The program has hosted students from over 50 home countries, hundreds of home institutions, and those with no research experience to more advanced students. The RISS community is committed to actively supporting the success of the summer scholars during their research immersion and beyond.

RISS | ROBOTICS INSTITUTE SUMMER SCHOLARS

Students emerge from the RISS program career and workforce ready and empowered with:

1. Technical knowledge, skills, and networks in robotics and AI that will open doors for years to come,
2. Increased confidence to pursue STEM careers and a firmer identity as future leaders in robotics & AI, and
3. Information about multiple pathways to funded graduate studies for careers in high demand.

> *In my opinion, RISS is more than just a robotics internship. Internships will come and go; but RISS is a family. In extension to the skills you'll develop as an intern, you will also develop countless valuable long-term connections in the RI with professors, entrepreneurs, and future RISS students! The program is both intense and incredibly rewarding.*
>
> 2019 Scholar

Over 95% of students
report that the RISS experience crystallized their interest in pursuing graduate studies or careers in STEM.

RISS ROBOTICS INSTITUTE SUMMER SCHOLARS

Quick Facts

CMU Community Creates Access

- 20+ robotics & AI labs
- 100+ mentors, tutors, & presenters
- 300+ alumni

Students Succeed in Research

- 50%+ of scholars & labs continue collaborating
- 200+ Publications in Peer-Reviewed Journals & Conferences
- 1000+ pages of scholar authored research papers in 8 Undergraduate Research Journal Volumes

CMU & RISS Partners Fund Student STEM Opportunities & Future

- $250,000+ annually supporting access to summer undergraduate research
- $2,000,000+ provided since 2006 to support access to undergraduate research
- $5,000,000+ in graduate studies scholarships for RISS alumni from the Robotics Institute
- $5,000,000+ additional graduate studies scholarships from top-ranked universities around the world as well as direct-to-industry pathways
- RISS community members stay connected & involved

> *Prior to my time at RISS, I had very limited exposure to quality research as well as collaborative academic environments. While I was familiar with many topics of focus superficially, it wasn't until being exposed to such a stimulating setting and world-class problem-solving skills firsthand that I began to deepen my understanding of many areas within Computer Vision and Robotics. It is my affirmative belief that my summer at RISS completely changed my trajectory as a researcher-in-training as well as my perception of myself and those around me.*
>
> 2018 Scholar

RISS ROBOTICS INSTITUTE SUMMER SCHOLARS

Student Success Models

The RISS community built successful student development models that broaden participation in STEM by creating nurturing and funded pathways from early undergraduate research experiences to graduate studies in robotics and related fields. The partnership & input of research mentors, student affairs professionals, and government & industry partners has been essential to meeting broad sector and industry needs. These models can be replicated and scaled.

BROOKINGS

Human capabilities are the fundamental driver of regional and state economic development.

Brookings Institution, 2019
brookings.edu

RISS ROBOTICS INSTITUTE SUMMER SCHOLARS

Model One

21st Century Robotics & AI Talent Development Model

Phase 1	Pre- Program Preparation	• Community Engagement (University, Industry, & Alumni) • Equipping with a Research Toolkit & Mindset (Program-led Workshops & Mentor Initiated Discussions) • Coaching & Cohort Building Activities
Phase 2	Research Experience & Professional Development	• Community Engagement (University & Industry) • Student Development Supports (Workshops, Tutors, Coaching, Peer Mentoring) • Knowledge Transfer with External Stakeholders
Phase 3	Post-Program Support & Community	• Continued Community Engagement • Graduate Admissions Mentoring • Industry Opportunities • Knowledge Transfer & Bi-directional Learning (Via Intl conferences, sponsor engagement, RISS journal, broadening participation outreach, home university talks)

Model Two

Pathways to Funded Graduate Education

Pathway	Resources & Programs	Activities & Output
Step 1: Building Knowledge, Skills, & Networks	Undergraduate Research Experience & Professional Development	• $250,000+ in summer research scholarships & program support annually • RISS Mentored Research Exploration of Robotics & AI & Professional Development
Step 2: Articulating & Customizing Paths to Funded Graduate Education	Accessible Futures in STEM: Graduate Education Exploration & Coaching	• Research Exploration • Fellowship Coaching • Application Mentoring • Direct to Industry Pathways
Step 3: Funding, Welcoming, & Supporting Scholars in Graduate Studies	CMU Robotics Institute Supported Scholarships for Graduate Studies (MS & Ph.D.) (Robotics, Artificial intelligence, Computer Science, Engineering)	• $5,000,000+ in direct scholarships from the Robotics Institute to RISS alumni • External fellowships (e.g., NSF, GEM)

RISS | ROBOTICS INSTITUTE SUMMER SCHOLARS

The RISS community is committed to lowering barriers - both real and perceived to the accessibility of futures in STEM. Scholars examine concrete paths to funded graduate studies, speak to current graduate students about various opportunities and fellowships, hear from admissions committee members about best positioning their experience, and receive extensive application coaching and post-program support (i.e., selecting graduate programs, developing a plan of action, drafting application materials, and navigating offers of admissions).

Equity + Innovation + Commitment + Community

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