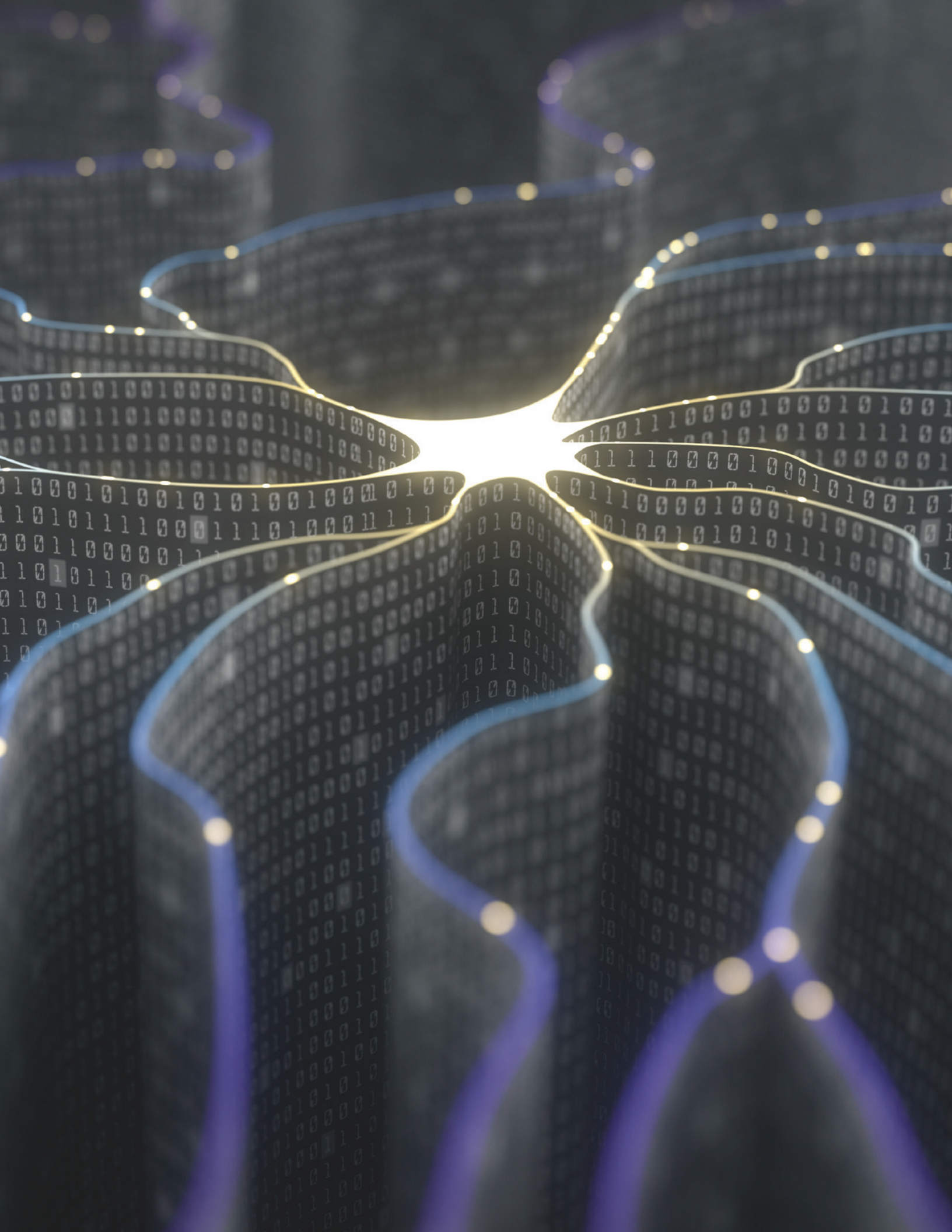**OUTCOMES REPORT**

IRVING: THE STUDENT SERVICE CHATBOT

Improving student outcomes through the power of artificial intelligence

CONSCIOUS THAT TIME IS A PRECIOUS RESOURCE, ESPECIALLY FOR ADULT LEARNERS WHO ARE OFTEN

working while in school, Strayer University developed a virtual assistant to accurately and efficiently respond to busy students' academic and administrative needs—ranging from registering for classes to locating tutoring resources.

Through this technology, students get answers more quickly, and University staff is freed up to focus on helping students with more complex needs along their journeys to complete their degrees.

RESULTS
Since spring 2017 when Irving launched:

INTERACTIONS[1]

More than
371,000
interactions with Irving, serving more than 59,000 unique students

SUCCESS RATE[2]

82%
success rate in Irving's ability to understand and respond accurately to student questions

RESPONSES[3]

4
Average number of responses per session

ATTENTION

1:40 min.
Average session time from first student interaction to last Irving response, less than a third of the time of similar sessions with human agents.

Learn more about how artificial intelligence is powering student success at Strayer University. ▶

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[1] Interaction is defined as a single message from the student to Irving.
[2] Success is defined as an intentional response that indicates some kind of understanding of the student's message.
[3] Response is defined as a message from Irving to the student. A session is a collection of interactions from the student and responses from Irving.

SITUATION

College isn't the only thing on most Strayer students' plates. Many of them are adult learners who have responsibilities beyond their academic lives. Some juggle coursework with a demanding career, while others balance raising a family with finishing their degrees. Time is not a luxury they possess.

Strayer wanted a way to simplify their students' hectic schedules or at least help them focus their time on the things that matter most: their coursework. **Necessary but tedious parts of the college experience—like registering for classes—were eating into students' time that could be better spent studying.** And, those requests were also overloading Strayer's academic advisors, who need to be available to help students navigate more complex requests.

Could Strayer streamline administrative support, cutting down time spent on tasks like registering for courses and checking on financial aid status? And could it help its team of advisors be more responsive to student needs?

Irving is accessible through the main page of iCampus, the University's online student portal.

"Irving has not only helped students get answers quicker, it has also freed up University staff to focus on helping students with greater, more complex needs along their journey to complete their degrees."

— JOE SCHAEFER,
Chief Transformation Officer, Strategic Education Inc.

SOLUTION—IRVING

| Strayer University's friendly chat bot

Strayer assembled a team with expertise in engineering, IT development, and behavioral psychology—all with previous experience at student service centers within the University—to develop a virtual agent that could learn by conversing with students and provide support in real-time.

The product of this collaboration is a chat bot called Irving—named after the university's founder, Dr. Irving Strayer. Irving is powered by DialogFlow, a platform that combines artificial intelligence technologies of machine learning and natural language processing (NLP). As a result, Irving is able to handle student requests in a conversational style.

Irving is accessible through the main page of iCampus, the University's online student portal. Students can connect with Irving for questions on academic and administrative services; tutoring, library and research resources; and IT Helpdesk issues. Because Irving is constantly learning through its interactions, the chat bot consistently delivers accurate information. Irving's margin for error is low and it's only getting smarter.

Irving fulfills a student's particular need by confirming relevant information during the text interaction through a simple chat interface. This gives Irving the ability to provide personalized information, such as directions for accessing a tutor, degree program requirements, or timelines for tuition reimbursements—the details that can make a difference in a student's experience at Strayer. Irving also understands when a conversation goes off-topic and redirects the student to a live human agent for further assistance.

Irving was designed to achieve three levels of engagement with students:

1. Understand the support each student is seeking

2. Provide tailored support to the student

3. Ensure that the support satisfies that student's need

"Irving is so fast and gives a good rundown of all my information. I don't think any other school has something this efficient!"

— Strayer University online student

CONTINUAL LEARNING

The Irving team is constantly monitoring how Irving is performing through its conversational interactions with students. This allows the team to methodically update the knowledge base, further employing NLP technologies, adjusting the machine learning settings and recalibrating Irving to ensure that it is responding as accurately and efficiently as possible.

Every interaction a student has with Irving is logged and measured for the number of positive interactions, false positives and the level of "intent matching"—meaning if Irving interpreted the student's need successfully.

The Strayer team also understands how students are interacting with Irving, while identifying the most frequently asked questions. This way, the response systems remain robust and prepared to consider a multitude of questions per issue area.

For instance, after a year of Irving's engagement with students, Strayer has found that:

- Financial aid questions are among the most frequently asked, and Irving is able to help students understand how their financial aid requests are progressing.

- Students frequently request support surrounding course registration and understanding what classes they need to take to fulfill graduation requirements.

- Students also ask about academic support including resources for tutoring, research or APA writing style guides.

RESULTS

Since spring 2017 when Irving launched:

INTERACTIONS

There have been more than 371,000 interactions with Irving, serving more than 59,000 unique students

KNOWLEDGE

With an intent library of more 1,025 topics, Irving is trained across multiple domains with the assistant's knowledge growing on a weekly basis.

SUCCESS RATE

Irving has had an 82% success rate in its ability to understand and respond accurately to student questions

SURVEY

80% of students surveyed following conversations with Irving have responded in an overwhelmingly positive manner and providing ideas for Irving's growth.

IMMEDIATE ATTENTION

On average, students receive immediate attention and responses from Irving, and an answer is typically provided within 1:40 minutes, taking less than a third of the time of similar interactions with human counselors
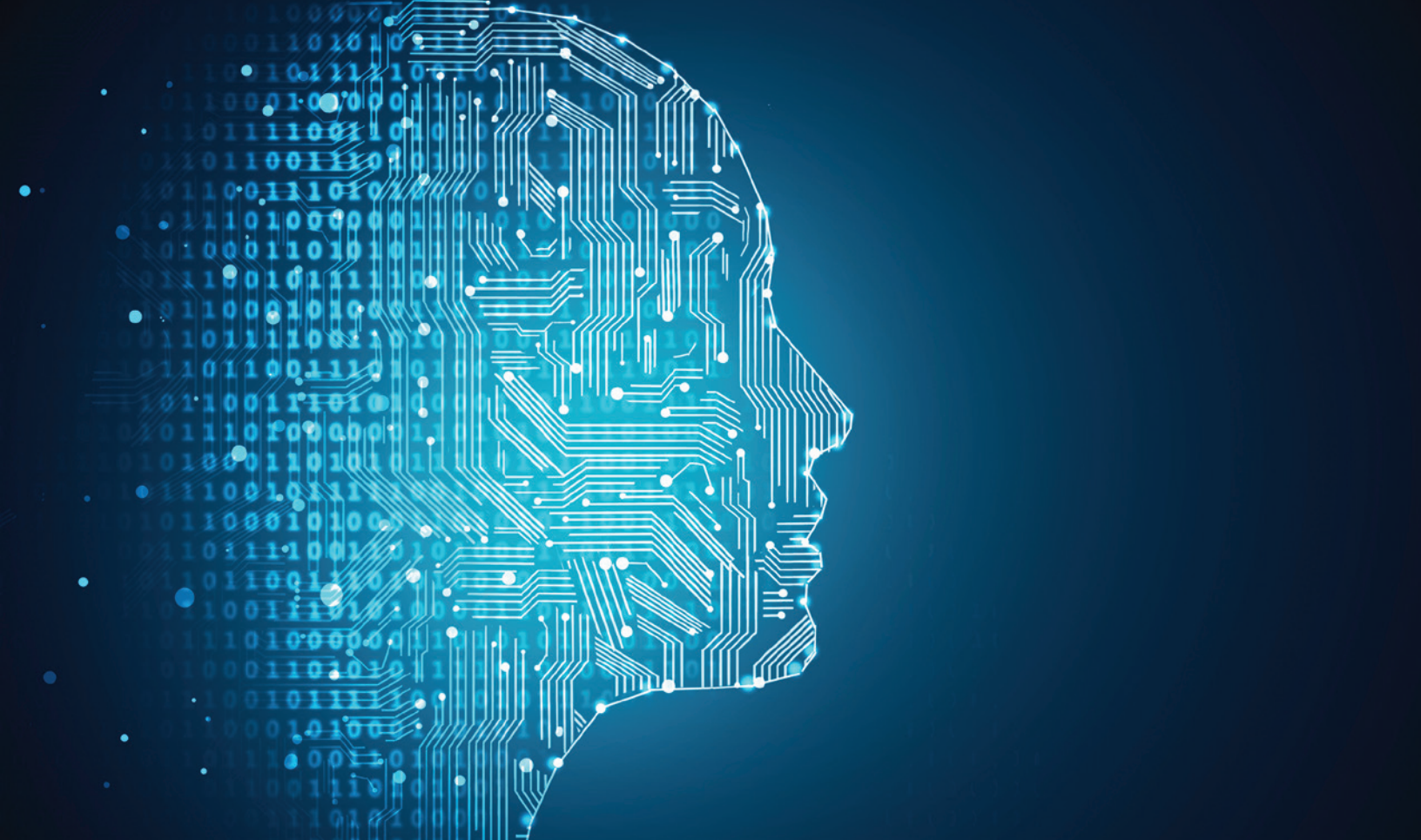
WHAT'S NEXT

While Irving is in its infancy, the technology is continuously being enhanced to adapt to student needs and engagement trends.

The Strayer team is working to bring Irving to additional channels, beginning with SMS and Google Assistant. Research and testing are underway that would allow for Irving to proactively engage with students to anticipate questions or provide reminders regarding their coursework. The scope of resources and support Irving provides to students will continue to grow so that each interaction will become more tailored to an individual student's needs.

Based on understanding the student's behavior, in the future Irving could send prompts to:

- Provide tutoring options for struggling students or, for those excelling, suggest they consider becoming a peer tutor.

- Offer financial literacy tools.

- Recommend they consider joining a student group that is aligned with their interests.

- Remind online students of deadlines for course assignments.

ADDITIONAL OUTCOMES REPORTS FROM STRAYER UNIVERSITY:

GRADUATION FUND
Reward-Based Funding Model Shows Improved Student Persistence
www.strayer.edu/affordability

STRAYER STUDIOS
Increased Student Engagement and Success through Captivating Content
studios.strayer.edu

DEGREES@WORK
Improving Employee Retention and College Access with FCA US LLC
(Fiat Chrysler Automobiles)
www.strayer.edu/workforce

About Strayer University
Founded in 1892, Strayer University is an institution of higher learning for working adult students. It offers undergraduate and graduate degree programs in business administration, accounting, information technology, education, health services administration, public administration, and criminal justice.

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U N I V E R S I T Y