THE GATEWAY

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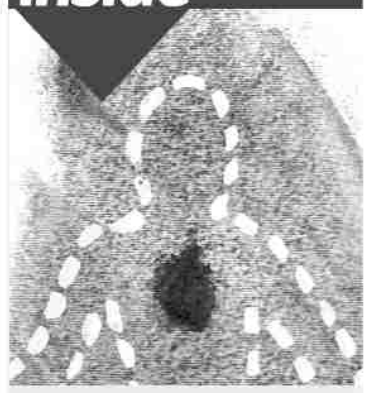


"A moment of quiet desperation"

The Gateway discusses the issue of suicide among young adults in the final installment of our mental health series.

FEATURE, PAGES 16-17

Complex theatrical creations

U of A Studio Theatre takes a closer look into the enigmatic work of Gertrude Stein.

A&E, PAGE 20

Musical mysteries

The Gateway talks to Mother Mother's Ryan Guldemond about the unexpected meaning he's found in the band's lyrics.

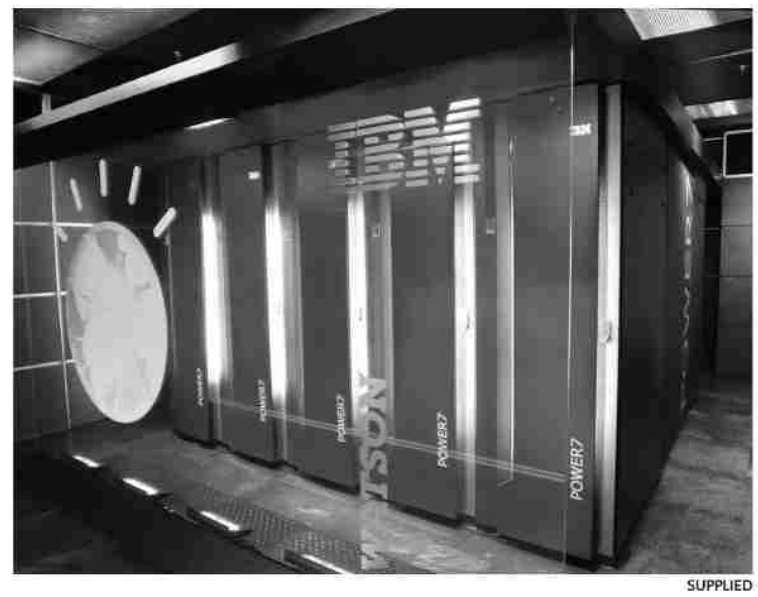
A&E, PAGE 19

BRANDON MEWHORT

A QUIET SUBTLETY A man in Indonesia makes cloth prints in one of the winning entries in *The Gateway* Literary Contest. To see the others, check pages 12-15.

IBM researcher shows off Watson's complex innards

HAYLEY DUNNING
News Staff



SUPPLIED

In February, IBM's "Watson" supercomputer defeated two *Jeopardy!* champions. On Monday, Watson researcher James Fan explained to a U of A audience exactly how they managed to do it.

The idea for the project came from an IBM executive, who had to convince a team of researchers to take on the huge task. In 2007, the original QA machine fell well below the performance of a typical *Jeopardy!* winner.

"What computers find hard is natural language. *Jeopardy!* is in this domain, and gives us a challenge. It helps us to produce a calculable, novel way to measure the drive in technology, to measure the progress," Fan said.

Watson is built with a knowledge database of 200 million pages of raw text, but a basic keyword search cannot cope with the complex semantics in a *Jeopardy!* clue. Watson instead uses several algorithms for many types of evidence, such as temporal reasoning, statistical paraphrasing, and geospatial reasoning.

The hundreds of gigabytes of data that comprise the knowledge set and algorithms are all stored within 2,880 computer cores, which allows Watson to compute a series of likely answers in two to six seconds, rather than in the two hours it would take with a single 2.6 gigahertz core.

Each "candidate answer" is given a confidence, and if this figure is above a pre-determined threshold, Watson will ring in and give an answer in the game show. The threshold changes throughout the game — if Watson has a big lead, the threshold will be high to minimize risk; if he's lagging behind, Watson will live more dangerously.

While some human strategy is built into Watson, he does have some disadvantages compared to his fleshy competitors.

"We can hear Watson speaking [...] but Watson cannot hear other players' answers. If another player gets the right answer, *Jeopardy!* sends the answer back to Watson. But if a player gets the wrong answer, Watson has no idea what it was," Fan explained.

PLEASE SEE **WATSON** ◆ PAGE 5

Smartphone text harder to comprehend

MATT MEUSE
News Writer

Reading comprehension from a smartphone screen is as low as half of that when reading from a standard desktop monitor, according to a recent study by a University of Alberta research team.

James Miller, professor of electrical and computer engineering and a member of the team that conducted the study, said that quirks inherent to smartphones and how people read from them means that mobile content providers need to develop smartphone-specific versions of their material if they want to have it properly understood by users.

"People tend to read better on [paper] than on [desktop computers], and when you just drop down again, you're making much more visual demands," Miller said.

The study focused specifically on privacy policies used by websites such as Facebook and Google. Using a Cloze test — a standard test of comprehension that omits words from a document at regular intervals and asks subjects to reinsert the correct word — Miller and his team found that comprehension of a privacy policy when read on an iPhone-sized screen was rated at 48 percent when compare to the same policy read on a desktop monitor.

PLEASE SEE **IPHONE** ◆ PAGE 3