

## **AI Biles:**

John A Biles, better known as AI Biles, is a current computer scientist, former psychologist, and musician. He received his psychology BA and computer science MS from the University of Kansas. Since 1980, he's been working in several different departments at RIT, which include: the School for Interactive Games and Media, Center for Media, Arts, Games, Interaction and Creativity (MAGIC), the school's information technology program, and the college's computer science program. He was the chair of RIT's computer science department for the 1990-1993 scholastic years. In 2007, he published his first academic book called *Evolutionary Computer Music*, which speaks about the genetic algorithms that are utilizable to generate inherently musical pieces.

Biles's biggest contribution to the cognitive musicology community came in the form of a project that he's been working on for many years, to the point that he says that is part of his identity. This project is known as GenJam which is short for genetic jammer, in that it uses genetic algorithms to create or jam, improv jazz beats. GenJam is a huge deal, because it capable of closely mimicking an actual musician. GenJam does this by taking in auditory input through sound sensors and running Biles's genetic algorithms on those input vectors to determine a set of acceptable musical notes (based off the note's scale) to produce for that specific input, that would be the most sensible musically. After choosing a note from the generated acceptable note set, GenJam then plays those notes from a speaker connected to the computer it is running on. GenJam is proven to work very well, appearing on TEDx, performing on 4 continents, and still performing to this day in RIT several times a week. GenJam stands as a testament to how far we've come in musical understanding and the power of combining the different subdisciplines of cognitive science.