The social issues of illiteracy

- Globally [1]
  - 750 million illiterate adults.
  - UNESCO International literacy day: September 8th
- In the United States [2,3]
  - 32 million adults are not able to read.
  - 50 percent of adults cannot read a book written at an eighth-grade level.
  - 185,000 students are at the lowest ESL (English as second language) level, beginning literacy.

Proposed system SIMPLER VOICE

- AI for Social Good.
- Supporting adult basic education (ABE), and the English as a second language acquisition (SLA).

System Design

**Technical Challenges**
- Semantic parsing / semantic analysis from unknown word to image queries.
- Word-sense-disambiguation mechanism.
- Linking words synsets to big datasets of descriptive images [5].
- Ranking queries & evaluating metrics [4,5].

**System Components**

- Input retrieval, Output display
- Object2text, Text2visual

**Result samples & System prototype:**

Evaluation

**System Prototype**
- Case study: grocery products shopping
- 114,522 products’ description

**Baselines & SIMPLER VOICE**
- Controlled user study:
  - 15 foreign subjects does not speak/comprehend English.
  - 3 experts who were bilingual in English and the subjects’ native language
  - A subset of random 20 U.S. products.
- Mean opinion score (MOS)

**Feedback**
- Participants in the Literacy Coalition of Central Texas’s SPARK program

References