

# JASON KATZ-BROWN

3 Ames Street, Box #311, Cambridge, MA 02142

650-892-9525; [jasonkb@mit.edu](mailto:jasonkb@mit.edu)

## Goal

- Challenging software engineering position in Korea, Japan, or the United States starting in late 2008.

## Education

- **Massachusetts Institute of Technology**—Cambridge, MA (Class of 2008)
  - Will receive Bachelor's degree in Electrical Engineering and Computer Science in February 2008.
  - Currently pursuing a Master of Engineering degree with Michael Collins at MIT; aim to complete in August 2008. Research topic is improving Japanese-English machine translation.
  - Completed courses in artificial intelligence, software engineering, computer system engineering, user interface design, machine learning, stochastic processes, natural language processing, Chinese, Korean, and linguistics.
  - GPA 4.9 (out of 5.0).
- **High School**
  - Attended Doshisha High School in Kyoto, Japan in January-July 2004; fluent in reading, writing, and speaking Japanese.
  - Graduated from Berkeley High School in 2004 while concurrently taking courses at UC Berkeley.

## Experience

- **Japanese-English translation system**, MIT CSAIL, Fall 2007-present
  - Developed a state-of-the-art Japanese-English statistical machine translation system, using the open-source Moses framework, whose quality compares to that of the best commercial systems. With Master's thesis adviser Michael Collins, investigating methods to improve word order in output translations, a major challenge when translating from a head-initial language like English to a head-final language like Japanese, languages whose word orders are completely different. One idea, a source-side reordering approach, pushed Japanese→English BLEU score from 12.84 to 14.83.
- **Second Google Internship**, Machine Translation Group, Summer 2007, Mountain View
  - Developed Google's first English→Japanese, Korean→Japanese, and Chinese→Japanese machine translation systems and dramatically improved Japanese→English translation quality. Over the summer, improved BLEU scores for Japanese→English by 9%, and English→Japanese by 11%. <[translate.google.com](http://translate.google.com)>
- **Google Internship**, Machine Translation Group, Summer 2006, Mountain View
  - Implemented novel discriminative training in Google's state-of-the-art statistical machine translation system. New mechanism analysed phrase alignment patterns of the training

data to improve word order of candidate translations. (Exploiting, for instance, that certain phrases in Chinese often flip places with the word following them when translated to English).

- **NTT Internship**, Machine Translation Group, NTT Keihanna Research Laboratory, Summer 2005, Kyoto, Japan

Wrote scripts to synthesize information from four extant Japanese dictionaries with respect to lexical type to create a master lexicon that could be plugged into the JACY Japanese grammar architecture. Lexical error rate for sample corpora decreased by almost an order of magnitude. This allowed the grammar to achieve approximately 80% coverage of newspaper texts. <[www.kecl.ntt.co.jp/icl/mtg/](http://www.kecl.ntt.co.jp/icl/mtg/)>

- **Quackle**, Scrabble®artificial intelligence coauthor, 2005-2006

Implemented an open-source Scrabble artificial intelligence and analysis tool. Quackle won the 2006 Human-Computer Scrabble Showdown held in Toronto, defeating the best computer and human Scrabble players. RealNetworks licensed the Quackle library to use in their officially-licensed retail Scrabble game. <[www.quackle.org](http://www.quackle.org)>

- **MIT Spoken Language Systems group member**

- Worked with Dr. Steve Glass on making the group's lecture transcription technology available to the world at large through integration with MIT's Open CourseWare video recordings of lectures. Developed first iteration of online search interface for lecture transcriptions and corresponding videos. <[groups.csail.mit.edu/sls/](http://groups.csail.mit.edu/sls/)>
- Worked with Professor Michael Collins to improve his tree-to-tree translation system for German and Spanish to English. Wrote a web-based interface for human linguists to annotate which phrases of two parallel translations align to each other with the goal of automatically learning new rules that accurately extract such correspondences.

- **K Desktop Environment Development on Linux**

- Author of Kiten, a Japanese-English reference and study tool distributed with KDE ([www.kde.org](http://www.kde.org)) in Linux distributions around the world. <[edu.kde.org/kiten/](http://edu.kde.org/kiten/)>
- Author of Kolf, a popular miniature golf game, distributed with KDE. <[www.klik.atekon.de/details.php?section=games/&package=kolf](http://www.klik.atekon.de/details.php?section=games/&package=kolf)>
- Author of Dearu, an experimental Japanese XIM input method. Currently investigating new solutions for foreign-language input for Linux. <[www.kde-apps.org/content/show.php?content=15437](http://www.kde-apps.org/content/show.php?content=15437)>
- Author of Mathemagics, a graphical reverse Polish notation (RPN) calculator. <[www.kde-apps.org/content/show.php?content=15436](http://www.kde-apps.org/content/show.php?content=15436)>
- Comanager of KDE public relations at Linux World Conference and Expo in San Francisco from 2001-2003, and Boston in 2005. KDE was a finalist for the expo's Best Open Source Project all four years and won the award in 2001.

- **Robotics design**, MASLab autonomous robot competition, January 2005

Implemented in Java a mapping system, state machine controller logic, and image processing on captured pictures from camera to successfully complete task of roaming a random, unknown playing area and collecting balls. <[maslab.csail.mit.edu/](http://maslab.csail.mit.edu/)>

- **Robocraft competitor**, MIT's robot programming competition, January 2006

Wrote Java programs for instances of robots competing in a real-time strategy game. Our code finished in the top 16 in the tournament. <[robocraft.mit.edu/](http://robocraft.mit.edu/)>

- ***Welcome to Linux and Open-Source***, a presentation (in Japanese) to an Executive Workshop at Softopia in Gifu, Japan, 2 July 2003

Explained the advantages and spreading adoption of open-source software and development models, and elucidated the methodology of KDE developers.

[web.mit.edu/jasonkb/Public/opensource.pdf](http://web.mit.edu/jasonkb/Public/opensource.pdf)

- **Natural Languages:** Fluent in Japanese, proficient in Korean and Chinese.
- **Computer Languages:** C++, Java, Python, PHP, Perl, HTML, L<sup>A</sup>T<sub>E</sub>X, shell scripting.
- **Operating Systems:** Linux, Mac OS X, Microsoft Windows.
- **Scrabble:** #1-ranked Scrabble player in the US. Came in 6th place in 2005 and 12th place in 2006 at the ESPN-televised US Scrabble Open. Member of US team at the 2005 and 2007 World Scrabble Championships in London and Mumbai. Coached Brookline Elementary student team to a 10th place finish at the 2004 National School Scrabble Championship.