Geza Kovacs

geza@cs.stanford.edu gkovacs.com

EDUCATION

Stanford University	PhD	Computer Science	GPA: 4.0/4.0	*2013 – now*
Massachusetts Institute of Technology	BS+MEng	Computer Science	GPA: 5.0/5.0	*2008 – 2013*

EXPERIENCE

Lilt – Senior Research Scientist, San Francisco *2019 – now*

I lead the HCI research group at Lilt, a human-in-the-loop machine translation startup.

- Improved the speed of Lilt's interactive machine translation system by shifting computation client-side and using heuristics to reuse computations.
- Ran user studies to evaluate where translators spend their time during translation, and identify features of translator behaviors that predict better performance.
- Ran large-scale A/B tests to evaluate the return-on-investment of translating websites, and developed a system to recommend which pages should be translated to which languages.

Stanford – PhD – led research projects published at top-tier venues, including: *2013 – 2019*

Large-scale Experiments for Online Behavior Change – published at CHI 2019 and CSCW 2018
I built HabitLab (http://habitlab.stanford.edu/), an app for Chrome + Android with **12,000+ daily active users** which helps users reduce time online. I used HabitLab for a variety of machine learning and data science work:

- Predicted changes in users' intervention preferences over time (using **LSTM Networks**; Python/PyTorch)
- Analyzed time redistribution effects caused by interventions (using **Mixed Models**; R/Python/SciPy)
- Analyzed effects of rotating interventions on effectiveness and attrition (**Cox Regression** and **LMM**; R)
- Personalized interventions to each user based on effectiveness (using **Reinforcement Learning**; Python)
- Predicted time spent on webpages, based on browsing visit history data (using **Random Forests**; Python/H2O)

Effects of In-Video Quizzes on MOOC Lecture Viewing – published at Learning at Scale 2016

- A **large-scale data mining** analysis of Coursera's in-video interaction logs in Machine Learning courses, analyzing effects of in-video quizzes on users' video viewing and seeking behavior (Python/Hadoop/Pandas)

Smart Subtitles for Foreign Language Learning – published at CHI 2014

- An interactive video viewer which uses **natural language processing** to improve vocabulary learning. Extracts transcripts via OCR, models users' knowledge, and provides personalized learning support.

Other work published at CSCW 2017 (EduFeed), UIST 2017 (Crowd Research), CHI 2015 (FeedLearn, QuizCram), UIST 2013 (GrammarVis), CHI 2012 (ScreenMatch) – complete publication list on page 2.

Microsoft Research – Research Intern, Redmond *Summer 2015*
Designed and built an educational social feed app usable by pre-literate children. Published at CSCW 2017.

Microsoft Research – Research Intern, Beijing *Summer 2014*
Built a quiz-driven MOOC lecture viewer that improved learning outcomes. Published at CHI 2015.

Google Research – Software Engineering Intern, Mountain View *Summer 2013*
Developed a machine learning system for detecting taps on the phone bezel, for use in Android input methods.

Google – Software Engineering Intern, Mountain View *Summer 2012*
Developed an NLP system to detect vocabulary and generate glossaries from book text (used MapReduce).

Google – Software Engineering Intern, Mountain View *Summer 2011*
Developed a machine learning system to predict the quality of user reviews, now deployed on Google Play.

Microsoft – Software Development Engineer Intern, Redmond – worked on compilers *Summer 2010*
Google – Summer of Code – worked on FFmpeg (open-source video transcoding library) *Summer 2009*

OPEN-SOURCE PROJECTS

UNetbootin (LiveUSB Creator) – http://unetbootin.github.io/ https://en.wikipedia.org/wiki/UNetbootin
40 million downloads. UNetbootin creates bootable USB flash drives for various (50+) Linux distributions.

Ubuntu Installer for Windows (Wubi) https://en.wikipedia.org/wiki/Wubi_(software)
Now part of Ubuntu. Built the first versions of Wubi, which allows Ubuntu to be installed from Windows.

RELEVANT COURSEWORK

Deep Learning (CS 230), **Natural Language Processing** (6.864, 6.863), Artificial Intelligence (6.034), Data Mining (CS 224w), Statistical Models (6.804), Statistics (18.440), Linear Algebra (18.700), Security (6.857), Bioinformatics (6.047), HCI (6.803), Algorithms (6.006, 6.046), Linguistics (24.900), Compilers (CS 143)

Awards and Honors

Stanford Human-Centered AI Grant (for my research project HabitLab), 2018
National Defense Science and Engineering Graduate Fellowship, 2013
National Science Foundation Graduate Research Fellowship, 2013
1st place, Most Useful, ACM UIST (User Interface Software and Technology) Student Innovation Contest, 2012
1st place, ACM CHI (Conference on Human Factors in Computing Systems) Student Research Competition, 2012
1st place, MIT Autonomous Robotics Competition (Maslab), 2010

Journal and Conference Papers

Geza Kovacs, Zhengxuan Wu, Michael Bernstein. "Not Now, Ask Later: Users Weaken Their Behavior Change Regimen Over Time, But Expect To Re-Strengthen It Imminently" ACM annual conference on Human Factors in Computing Systems (CHI) 2021.

Samuel Läubli, Patrick Simianer, Joern Wuebker, **Geza Kovacs**, Rico Sennrich, Spence Green. "The Impact of Text Presentation on Translator Performance." Target: International Journal of Translation Studies, 2020.

Geza Kovacs, Drew Mylander Gregory, Zilin Ma, Zhengxuan Wu, Golrokh Emami, Jacob Ray, Michael Bernstein. "Conservation of Procrastination: Do Productivity Interventions Save Time Or Just Redistribute It?" ACM annual conference on Human Factors in Computing Systems (CHI) 2019.

Geza Kovacs, Zhengxuan Wu, Michael Bernstein. "Rotating Online Behavior Change Interventions Increases Effectiveness But Also Increases Attrition." ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2018.

Rajan Vaish, Neil Gaikwad, **Geza Kovacs**, Andreas Veit, Ranjay Krishna, Imanol Arrieta Ibarra, Camelia Simoiu, Michael Wilber, Serge Belongie, Sharad Goel, James Davis, Michael Bernstein. "Crowd Research: Open and Scalable University Laboratories." ACM Symposium on User Interface Software and Technology (UIST) 2017.

Kiley Sobel, **Geza Kovacs**, Galen McQuillen, Andrew Cross, Nirupama Chandrasekaran, Nathalie Riche, Ed Cutrell, Meredith Morris. "EduFeed: A Social Feed to Engage Preliterate Children in Educational Activities." ACM annual conference on Computer Supported Collaborative Work (CSCW) 2017.

Geza Kovacs. "Effects of In-Video Quizzes on MOOC Lecture Viewing." ACM annual conference on Learning at Scale (L@S) 2016.

Geza Kovacs and Robert C. Miller. "Smart Subtitles for Vocabulary Learning." ACM annual conference on Human Factors in Computing Systems (CHI) 2014.

Peer-Reviewed Extended Abstracts

Stanford Crowd Research, **Geza Kovacs**, Rajan Vaish, Michael Bernstein. "Daemo: A Self-Governed Crowdsourcing Marketplace". ACM Symposium on User Interface Software and Technology (UIST) 2015, Poster.

Geza Kovacs. "FeedLearn: Using Facebook Feeds for Microlearning." ACM annual conference on Human Factors in Computing Systems (CHI) 2015, Extended Abstracts.

Geza Kovacs. "QuizCram: A Question-Driven Video Studying Interface." ACM annual conference on Human Factors in Computing Systems (CHI) 2015, Extended Abstracts.

Joseph Jay Williams, **Geza Kovacs**, Caren Walker, Samuel G Maldonado, Tania Lombrozo. "Learning Online via Prompts to Explain." ACM annual conference on Human Factors in Computing Systems (CHI) 2014, Extended Abstracts.

Geza Kovacs and Robert C. Miller. "Foreign Manga Reader: Learn Grammar and Pronunciation while Reading Comics." ACM Symposium on User Interface Software and Technology (UIST) 2013, Demo.

Geza Kovacs. "Smart Subtitles for Language Learning." ACM annual conference on Human Factors in Computing Systems (CHI) 2013, Extended Abstracts.

Geza Kovacs. "ScreenMatch: providing context to software translators by displaying screenshots." ACM annual conference on Human Factors in Computing Systems (CHI) 2012, Extended Abstracts.

Teaching Experience

Understanding Users (CS 377U) – Teaching Assistant, at Stanford *Spring 2019*

Human Computer Interaction Research (CS 376) – Teaching Assistant, at Stanford *Fall 2018*

Natural Language Processing (6.863) – Teaching Assistant, at MIT *Fall 2012*

Introduction to C++ IAP (6.096) – Instructor, at MIT *January 2011*

My lectures and teaching materials for this course are available on MIT OpenCourseWare:
http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-096-introduction-to-c-january-iap-2011

MASLAB Mobile Autonomous Systems Lab (6.186) – Software Director, at MIT *January 2011*

Gave lectures on computer vision and managed the software stack for an autonomous robotics competition.

Skills and technologies

Programming: Python, C/C++, R, JavaScript, Java, Scala, C#, Ruby, TypeScript, CoffeeScript, Haskell, Bash
Machine Learning: Deep Learning (RNN/LSTM/CNN/GAN), Reinforcement Learning (multi-armed bandit)
ML+Data Engineering: PyTorch, scikit-learn, Keras, TensorFlow, NumPy, Pandas, H2O, MapReduce (Hadoop)
Natural Language Processing: NLTK, word embeddings (word2vec), parsing, language models, WordNet
Data Mining: PyData, SciPy, Visualization (D3.js/ggplot2/Plotly), SQL, NoSQL (Mongo), NetworkX, Jupyter
Data Science: Mixed models, Survival analysis, A/B testing, Experiment design, Crowdsourcing (mTurk)
Backend+Systems: Node.js, Flask, MongoDB, PostgreSQL, Redis, Docker, Google Cloud, AWS EC2, CUDA
Web + Mobile: HTML/CSS/JS, Polymer, React, Webpack, Flow, JSX, Android (Java, Cordova, NativeScript)
Languages: Fluent English and Chinese (Mandarin). Intermediate Hungarian, Vietnamese, Japanese, Spanish.