

Jun Hee Lee

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- Experience**
- Software Engineer**, Google
- Google, Mountain View, CA Sep. 2014 – Present
 - Work on promotions platform development for Google Play service
 - Google Japan, Tokyo, Japan Jul. 2015 – Aug. 2016
 - Google Korea, Seoul, South Korea Jun. 2015 – Jul. 2015
- Research Assistant**, New York University, New York, NY Jan. 2013 – Jul. 2014
- Supervisor: Professor Tae Hong Park, Citygram/CUSP Noise Project
 - Developed client application for Android OS for recording, analyzing, processing, and streaming local audio signals
 - Developed Sound Analysis Toolbox, a MATLAB suite, for analysis and automatic classification of large-scale urban soundscape recordings
 - Supervisor: Professor Morwaread Farbood
 - Created MATLAB scripts to generate random dot kinematogram for audiovisual perception studies
 - Administered audiovisual perception experiments
- Software Engineer Intern**, iZotope, Inc., Brooklyn, NY Oct. 2011 – Aug. 2012
- Prototyped potential products based on the ideas of collaborating musician BT
 - Worked on developing Trash 2, a creative audio distortion plug-in suite
- Education**
- New York University**, New York, NY Jan. 2015
Master of Music in Music Technology
Thesis: Analysis and Exploration of Urban Soundscapes Using Crowdsourced Repositories
Advisor: Professor Tae Hong Park
- Berklee College of Music**, Boston, MA Aug. 2011
Professional Diploma in Electronic Production/Design and Performance
- Korea Advanced Institute of Science and Technology**, Daejeon, South Korea
Bachelor of Science in Computer Science Aug. 2005
- Honors and Awards**
- Research Assistantship**, NYU Steinhardt Dept. of Music and Perf. Arts 2013 – 2014
Received full tuition waiver and stipend for the 2013 – 2014 academic year to work on Citygram/CUSP Noise Project
- Berklee Achievement-Based Scholarship**, Berklee College of Music 2010 – 2011
Received achievement-based scholarship with incremental achievement grants
- Gold Prize**, The 17th Korea Olympiad in Informatics 2000
Solved time-constrained optimization problems using efficient data structures and algorithms
- Silver Prize**, The 7th Samsung Human Tech Thesis Competition 2000
Title: Self-Evolutionary Genetic Algorithm: Genetic algorithm meets simulated annealing

Selected Publications T. H. Park, **J. H. Lee**, J. You, M.-J. Yoo, J. Turner. Towards soundscape information retrieval (SIR). In *Proceedings of the Joint ICMC/SMC 2014 Conference*. 2014.

T. H. Park, J. Turner, M. Musick, **J. H. Lee**, C. Jacoby, C. Mydlarz, J. Salamon. Sensing urban soundscapes. In *Proceedings of the Joint EDBT/ICDT 2014 Workshops*. 2014.

Recent Projects **Heuristic Problem Solving** 2013
Used various techniques to design heuristic algorithms in Java, Python, and C++ for weekly optimization problems and adversarial games

Multi-Domain Language Modeling 2013
Devised and compared methods to combine multiple language models in different domains for more robust likelihood estimation with broader domain coverage

Supervised Learning for Guitar Chord Voicing Identification Aided by the Use of MIDI Pickups 2013
Devised a multiple pitch detection algorithm for guitar using support vector machines (SVMs) in MATLAB

Harmony Police: Jazz Improvisation Evaluator 2013
Developed a game-like application in Cocoa and C++ that evaluates harmonic fluency of a recorded improvisational audio with respect to the jazz theory for educational purpose

Computer Graphics Projects 2013
Explored various graphics topics, including shaders, ray tracing, transformation matrix, and forward/inverse kinematics, and modeled interactive scenes using WebGL and JavaScript

Pitch Detection of Singing Voice from Popular Music Recordings 2012
Implemented an algorithm in MATLAB for voice separation of popular music recordings for robust pitch extraction of the main melody and its creative applications

Pic-a-Tune: Image to Modal Music Converter/Generator 2011
Developed and showcased a customizable C++ system that generates a musical piece from various analyses of an image file

Skills

Programming Languages

- Java, C/C++, MATLAB, Python, and Objective-C
- Prior experience with JavaScript, Prolog, Scheme, ML, and Assembly

Computer Science-Related Expertise

- Data Structures, Algorithms, and Problem Solving
- Metaheuristics, mainly Simulated Annealing and Genetic Algorithm
- Machine Learning and Natural Language Processing

Music and Audio-Related Expertise

- Digital Signal Processing and Music Information Retrieval
- Guitar, Improvisation, Jazz Theory, Composition, and Arranging
- MIDI Sequencing, Audio Editing, and Audio Engineering
- Creative Sonification Techniques