

# Jean Young Song

Ph.D. Candidate, Electrical Engineering and Computer Science  
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## Education

Sep. 2012 - Present Ph.D. candidate, Electrical Engineering and Computer Science (EECS)  
**The University of Michigan, Ann Arbor**  
Sep. 2009 - Aug. 2011 M.S., Electrical and Electronic Engineering  
**Yonsei University, Seoul, South Korea**  
Mar. 2004 - Aug. 2009 B.S., Electrical and Electronic Engineering (Minor, Psychology)  
**Yonsei University, Seoul, South Korea**

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## Research Experience

Jan. 2017 - Present **Graduate Student Research Assistant**  
**Crowds and Machines (CROMA) Lab, EECS, University of Michigan**  
- Building crowdsourcing tools to help autonomous robots recognize new contexts in real-time  
Aug. 2012 - Apr. 2015 **Graduate Student Research Assistant**  
**Digital Image Processing Lab, Department of Radiology, University of Michigan**  
- 2D/3D non-rigid image registration of microscopy/colonoscopy images of mouse colon polyps  
- Feature classification for normal/cancerous tissue segmentation of colonic cancer  
Sep. 2009 - Jul. 2011 **Graduate Researcher**  
**Image and Information Lab (IILAB), Yonsei University**  
- Reducing the bit-rate of the video codec of Next-generation Digital TV Broadcasting System  
- Reducing the decoder complexity of High Efficient Video Coding(HEVC) Standard  
- Fine detection of tampered area of an image using watermarking  
Jun. 2008 - Aug. 2009 **Undergraduate Research Assistant**  
**IILAB, Yonsei University**  
- Implemented the framework of Scalable Video Coding (SVC) Player using MFC programming  
Dec. 2007 - May 2008 **Undergraduate Research Assistant**  
**Center for Signal Processing Research, Yonsei University**  
- Improved data transfer efficiency for a security camera by designing self-detection algorithms

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## Teaching Experience

Fall 2009 **Teaching Assistant, Yonsei University, Seoul, South Korea**  
- EEE2060: Signal and System (Lecturer: Prof. Yoonsik Choe)

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## Conference Papers

- S. Gouravajhala, J.Y. Song, J. Yim, R. Fok, Y. Huang, F. Yang, K. Wang, Y. An, W.S. Lasecki. Towards Hybrid Intelligence for Robotics. In Collective Intelligence Conference (CI 2017). New York, NY.  
- Jean Y. Song and Charles R. Meyer, 2D-3D Image Registration using Thin-Plate Spline and Volume Rendering, SPIE Medical Imaging 2015, Orlando, Feb. 2015.  
- Jean Y. Song, J. A. Fessler, and C. R. Meyer, Adaptive Filtering on Conditional Mutual Information for Intermodal Non-Rigid Image Registration, IEEE NSS/MIC 2014, Seattle, Nov. 2014.  
- Jean Y. Song, Honglin Jin, and Yoonsik Choe, Image Tamper Detection Method Based on Data Hiding, Conference 2010 Image Processing and Image Understanding (IPIU), Jeju, South Korea, Jan. 2010. (Written in Korean)  
- Jean Y. Song, Honglin Jin, and Yoonsik Choe, Hash Value Delay Hiding for Image Authentication, EURO-SIAM 2010, Athens, Greece, Dec. 2010.

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## Honors & Awards

Jan. 2010 - Volunteer Honor for distinguished volunteering, the Mayor of Seoul  
May 2008 - Undergraduate Creative Research Excellence Award, Yonsei Univ. Dept. of EE  
Aug. 2005 - Merit-based Scholarship, Yonsei University

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## Proficient Skills

**Programming/Simulation:** Javascript, Python, C/C++, MATLAB, MFC  
**Documentation:** LATEX, MS-Office

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## Relevant Courses

- Estimation Theory: Probability and Random Processes, Modern Spectral Estimation,  
- Signal Processing: Signal and System, Digital Signal Processing, Speech Signal Processing  
- Image Processing: Image Processing, Image Coding  
- Computer Vision: Statistical Pattern Recognition, Computer Vision  
- Communication Systems: Theory of Communication, Broadcasting System Engineering  
- Control Systems: Control Engineering, Digital Control Engineering  
- Programming: C Programming, Data Structure and Algorithms, Embedded S/W Lab

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