AUBURN UNIVERSITY

Xinyu Zhao

Education

2013 – 2016 (expected) **PhD**, *Auburn University*, Auburn, AL, *GPA: 3.82/4.0*.
Major in Electrical and Computer Engineering;

2011 – 2012 **Master**, *Auburn University*, Auburn, AL.
Major in Electrical and Computer Engineering;

Skills

Programming Languages: C++, MATLAB (solid, day-to-day usage); R (intermediate); Python (some knowledge)

Other Skills: Machine learning (Genetic Algorithm, unsupervised clustering), Statistics, Optimization

Research Experience

Jan., 2015 – present **Functional MRI based classification of different mental disorders**.
- Apply different unsupervised clustering methods, e.g., hierarchical clustering, density based clustering, etc, on fMRI data.
- Accurately and objectively identify mental disorders, e.g., autism, PTSD, PCS, etc.

Jan., 2012 – Dec., 2014 **Simulation and optimization of line edge roughness and critical dimension error in electron-beam lithography**.
- Proposed a new method to simulate stochastic exposure fluctuation.
- Proposed two methods to determine the optimal dose on e-beam lithography.
- Proposed a method to match simulated SEM images with real SEM images taken from the experiments by using Genetic Algorithm (GA).

Jan., 2011 – Dec., 2011 **Image registration based on image moment**.
- Applied image moment to calculate image transformation parameters from geometric distortion.
- Applied point to point mapping to to locate deformed part (e.g., tumor) in the image.

Publications

2015 **Dependency analysis of line edge roughness in electron-beam lithography**, *X Zhao, SY Lee, J Choi, SH Lee, IK Shin, CU Jeon*, Microelectronic Engineering.

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2014 **Determination and analysis of minimum dose for achieving vertical sidewall in electron-beam lithography**, *X Zhao, Q Dai, SY Lee, SH Lee, BG Kim, HK Cho*, Journal of Vacuum Science & Technology B 32 (6), 06F508.

2014 **Minimization of line edge roughness and critical dimension error in electron-beam lithography**, *X Zhao, SY Lee, J Choi, SH Lee, IK Shin, CU Jeon, BG Kim, HK Cho*, Journal of Vacuum Science & Technology B 32 (6), 06F505.

2012 **Fast simulation of stochastic exposure distribution in electron-beam lithography**, *X Zhao, SY Lee, SH Lee, BG Kim, HK Cho*, Journal of Vacuum Science & Technology B 30 (6), 06F308.