

# CONGZHENG SONG

Curriculum Vitae

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## CONTACT

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## EDUCATION

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**Cornell University**, Ithaca, NY 2016 – Present  
Ph.D. student in Computer Science  
Research Interests: Security and Privacy in Machine Learning

**Emory University**, Atlanta, GA 2012 – 2016  
B.S. in Computer Science with Summa Cum Laude  
Thesis: *Using Deep Recurrent Neural Networks to Estimate Influenza Prevalence from Mobile Phone Records*

## PUBLICATIONS

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### Peer-reviewed Journal & Conference

1. Safoora Yousefi, Fatemeh Amrollahi, Mohamed Amgad, Coco Dong, Joshua E. Lewis, **Congzheng Song**, David A. Gutman, Sameer H. Halani, Jose Enrique Velazquez Vega, Daniel J. Brat, Lee A.D. Cooper  
*Predicting Clinical Outcomes from Large Scale Cancer Genomic Profiles with Deep Survival Models*  
In *Scientific Reports* 7 (Nature), 2017
2. **Congzheng Song**, Thomas Risternpart, Vitaly Shmatikov  
*Machine Learning Models that Remember Too Much*  
In *the ACM Conference on Computer and Communications Security (CCS)*, Dallas, Texas, 2017
3. Reza Shokri, Marco Stronati, **Congzheng Song**, Vitaly Shmatikov  
*Membership Inference Attacks against Machine Learning Models*  
In *38th IEEE Symposium on Security and Privacy (S&P)*, San Jose, California, 2017

### Workshop & Poster

1. Safoora Yousefi, **Congzheng Song**, Nelson Nauata, Lee Cooper  
*Learning Genomic Representations to Predict Clinical Outcomes in Cancer*  
In *International Conference on Learning Representation Workshop (ICLR)*, San Juan, Puerto Rico, 2016
2. Erik Reinertsen, Niclas Palmius, **Congzheng Song**, Leon Danon, Gudrun Saemundsdottir, Olafur Magnusson, Gari D Clifford, Ymir Vigfusson  
*Mobile Phone Activity and Population Movement During an Influenza A (H1N1) Outbreak in Iceland*  
In *Sleep Medicine and Chronobiology Summer Schools Poster Session*, Oxford, UK, 2015

## RESEARCH EXPERIENCE

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**Graduate Research Assistant**  
Department of Computer Science, Cornell University  
∞ Exploring privacy leakage in machine learning models.

2016 – Present  
Adviser: Prof. Vitaly Shmatikov

**Undergraduate Research Assistant** 2015 – 2016  
Department of Math & CS, Emory University Adviser: Prof. Ymir Vigfusson  
∞ Extracted a set of metrics to describe human behavior from mobile phone records.  
∞ Developed a deep learning model for individual sickness prediction given behavioral features.

**Undergraduate Research Assistant** 2015 – 2016  
Department of Bioinformatics, Emory University Adviser: Prof. Lee Cooper  
∞ Developed a neural network combining with Cox regression for survival analysis.  
∞ Applied convolutional neural network in cancer cell image classification.

**Undergraduate Research Intern** Summer 2015  
Department of Computer Science, UC Irvine Adviser: Prof. Sharad Mehrotra  
∞ Developed a web framework for collecting, querying and visualizing sensor data.  
∞ Involved in implementing backend server modules to handle user's request for processing sensors' data on multiple platforms.

## TEACHING EXPERIENCE

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**Graduate Teaching Assistant** Fall 2016  
CS 3410: Computer System Organization and Programming Instructor: Prof. Anne Bracy

**Undergraduate Lab Teaching Assistant** Fall 2013  
Chem 141: General Chemistry I Instructor: Prof. Karl Hagen

## AWARDS

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∞ Trevor Evans Award 2016  
∞ Deborah Jackson Award 2015  
∞ Dean's List 2012 – 2016

## SKILLS

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**Programming and Scripting Languages:** Python, Java, C, JavaScript, HTML & CSS,  $\LaTeX$

**Software and Tools:** Tensorflow, Theano, Matlab, R studio, Node.js, MongoDB, PostgreSQL

**Languages:** Chinese (Native), English (Professional), Japanese (Basic)

## SELECTED COURSEWORK

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**Computer Science:** Analysis of Algorithm, Bayesian Machine Learning, Advanced Programming Languages, Natural Language Processing, Data Mining, Artificial Intelligence, Theory of Computing, Discrete Structures, Competitive Programming, Computer Security

**Mathematics:** Probabilities and Statistics, Partial Differential Equations, Numerical Analysis, Optimization Theory, Ordinary Differential Equations, Linear Algebra