

# Xiang Huang

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## CONTACT INFORMATION

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Department of Computer Science  
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## PERSONAL WEBSITE

<https://xiangyazi24.wixsite.com/huangx>

## RESEARCH INTERESTS

Algorithmic Information Theory, Analog Computing, Computational Complexity

## EDUCATION

**Iowa State University**, IA, US.

Ph.D. in Computer Science, Aug, 2012- Fall, 2019 (expected).

- Topic: *Theoretical Computer Science*
- Advisor: Professor Jack Lutz

**Institute of Software, Chinese Academy of Sciences**, Beijing, China.

Computer Science, Sept, 2009- June, 2012.

- Topic: *Model Checking, Formal Methods, Automata Theory*

**Nanjing University**, Nanjing, China.

B.E. in Software Engineering , June 2009.

## RESEARCH EXPERIENCE

### Research Assistant

Algorithmic Randomness and Analog Computing

Sept 2013 to Present

Supervisor: Prof. Jack Lutz

### Research Assistant

Automata Theory, Semigroups and Boolean Matrices

Sept 2012 to Aug 2013

Supervisor: Dr. Ting Zhang

## TEACHING EXPERIENCE

### Teaching Assistant

COM S 531 - Theory of Computation (Grad)

Spring 2014, 2016

COM S 511 - Algorithm Design and Analysis (Grad)

Fall 2014, 2015, 2017

COM S 331 - Theory of Computation

Fall 2016, Spring 2019

COM S 311 - Algorithm Design

Summer 2015, 2016, Fall 2018

COM S 330 - Discrete Mathematical Structures

Spring 2014

COM S 252 - Introduction to Operating Systems

Fall 2013

## AWARDS:

Teaching Excellence Award, 2017, Iowa State University.

Travel Award: 16th International Conference on Unconventional Computation and Natural Computation, 2017.

Travel Award: Association for Symbolic Logic North American Annual Meeting, 2018.

CONFERENCE PUBLICATIONS: Xiang Huang and Donald. M. Stull. Polynomial Space Randomness in Analysis. *In Proceedings of the 41st International Symposium on Mathematical Foundations of Computer Science (MFCS)* , August 2016:86:1-86:13.

Xiang Huang, Titus H. Klinge, James I. Lathrop, Xiaoyuan Li and Jack H. Lutz. Real-Time Computability of Real Numbers by Chemical Reaction Networks. *In Proceedings of the 16th International Conference on Unconventional Computation and Natural Computation (UCNC)* , June 2017, pp. 29-40.

Huang X., Klinge T.H., Lathrop J.I. (2019) Real-Time Equivalence of Chemical Reaction Networks and Analog Computers. In: Thachuk C., Liu Y. (eds) DNA Computing and Molecular Programming. DNA 2019. Lecture Notes in Computer Science, vol 11648. Springer, Cham.

Xiang Huang, Jack H. Lutz, and Andrei N. Migunov. Algorithmic Randomness in Continuous-Time Markov Chains, 2019. (Accepted, to appear in Proceedings of the 57th Annual Allerton Conference on Communication, Control, and Computing)

JOURNAL PUBLICATION Xiang Huang, Titus H. Klinge, James I. Lathrop, Xiaoyuan Li and Jack H. Lutz: Real-Time Computability of Real Numbers by Chemical Reaction Networks. *Volume 18, Issue 1, pp 63-73, Natural Computing (2019). (invited paper).*

SUBMITTED MANUSCRIPTS Xiang Huang, Jack H. Lutz, Elvira Mayordomo, and Donald Stull. Asymptotic Divergences and Strong Dichotomy, 2019. (under review)

TALKS: Contributed Talk: *Real-Time Computability of Real Numbers by Chemical Reaction Networks*, UCNC 2017.

*Real-Time Computability of Real Numbers by Chemical Reaction Networks*, the 19th Graduate Student Conference in Logic, Madison, WI.

*Asymptotic Divergences and Strong Dichotomy*. Iowa Colloquium on Information, Complexity, and Logic (ICICL), Spring 2019.

*Some Thoughts on Normality, Algorithmic Randomness, and Analog Computing*. Swarthmore College, Swarthmore, PA, March 2019.

REFERENCES: Jack Lutz Timothy H. McNicholl James Lathrop  
 Professor Associate Professor Assistant Professor  
 Department of Computer Science Department of Mathematics Department of Computer Science  
 Iowa State University Iowa State University Iowa State University  
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