

**Lu, Kuang-Chen**

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## RESEARCH INTERESTS

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Programming Language

## EDUCATION

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<b>Indiana University</b> , Bloomington IN	May 2020
<i>Master of Science in Computer Science</i>	GPA 4.0/4.0
Courses: Programming Language, Compiler, Applied Algorithm	
<b>Shanghai Jiao Tong University</b> , Shanghai, China	June 2018
<i>Bachelor of Science in Biotechnology (Bioinformatics Pioneer Class)</i>	GPA 3.3/4.0
Courses: Algorithm, Algorithm and Data Structure, Computer Network	

## RESEARCH EXPERIENCES

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<b>School of Software Engineering, SJTU</b> , Shanghai, China	Mar. 2017 – Oct. 2017
<i>Transformation from Context-Free Grammar to Automata</i>	

- Improve an algorithm transforming a CFG to a FA while maintaining their Parikh images
- Noticed the output FA was not a general graph, but has special structure feature
- Reduced the algorithm's time complexity from exponential to polynomial, with a special representation of FA

<b>Lab of Computational Genomics and Metagenomics, SJTU</b> , Shanghai, China	May. 2016 – Aug. 2018
<i>WebPhyloTree</i>	

- Developed a JavaScript library for visualizing phylogenetic trees on web page
- Provided a GUI for configuring layout, color scheme, and functionality
- Features: plugin system, style customization, all three popular tree layouts (circular, rectangular, and unroot)
- Programming Languages & Technologies: JavaScript, SVG

<b>Lab of Computational Genomics and Metagenomics, SJTU</b> , Shanghai, China	Mar. 2015 – June 2016
<i>RPAN: Rice Pan-genome Browser</i>	

- Developed a key component to help users finding species of interest using evolutionary relationship information
- Cooperated closely with several co-workers to build, test, debug, and document the browser
- Programming Languages & Technologies: JavaScript, SVG, PHP, Node.js
- Co-published an article about RPAN (see below)

<b>Lab of Computational Genomics and Metagenomics, SJTU</b> , Shanghai, China	Sept. 2016 – Oct. 2016
<i>Eukaryotic Pan-genome Analysis Toolkit (EUPAN)</i>	

- Enabled EUPAN to work with one more supercomputer workload managers, SLURM
- Cooperated with core developers to update documentation accordingly

## PERSONAL PROJECTS

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*Interpreter for a Subset of Scheme with First-Class Continuation*

- Implemented first-class continuation by performing CPS transformation

*A Brief Programming Tutorial (in Chinese)*

- Created a tutorial on fundamental concepts (namespace, procedure, variable, statements, iteration, etc.) to help a non-technical individual develop a better understands

## PUBLICATIONS

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- Sun, C., Hu, Z., Zheng, T., Lu, K., Zhao, Y., Wang, W., ... & Li, Z. (2017). RPAN: rice pan-genome browser for ~ 3000 rice genomes. *Nucleic acids research*, 45(2), 597-605.
- Hu, Z., Sun, C., Lu, K. C., Chu, X., Zhao, Y., Lu, J., ... & Wei, C. (2017). EUPAN enables pan-genome studies of a large number of eukaryotic genomes. *Bioinformatics*, btx170.

## OTHER ACTIVITIES

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<b>Indiana University</b> , Bloomington IN	Oct. 2018 – Feb. 2019
<i>2018-2019 Committee of Preparing Future Faculty Conference</i>	

- help preparing the conference: suggest speakers, decide conference topic, spread flyers, and update its website
- volunteer at register table during the conference

**IU Memorial Stadium**, Bloomington IN

Aug. 2018 – Dec. 2018

*Working as an Usher/ticket taker*

**A Primary School**, Henan Province, China

July 2017 – Aug. 2017

*Volunteer teaching*

- Subjects: English, Sex Education, Chemistry Lab

## **MISCELLANEOUS**

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- Programming Languages: Scheme, Java, C, R, Racket, JavaScript, Python
- Hobbies: Programming, Reading, Table Tennis, Pooling