

# NAN DU

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## Education

**May, 2015-Present**

**Ph. D., Computer Science, Michigan State University, East Lansing**

- Research Interests: Sequence error correction, Metagenomics, Homology search
- Supervisor: Prof. Yanni Sun
- GPA: 4.0/4.0

**July, 2012-May, 2015**

**M. Sc., Condensed Matter Physics, Michigan State University, East Lansing, MI, USA**

- Research Interests: Ultrafast electron diffraction, metal-insulator transition, charge density wave
- Supervisor: Prof. Chong-Yu Ruan

**Sep, 2007-July, 2011**

**B. S., Physics, Fudan University, Shanghai, China**

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## Research Experience

**Jan, 2015-Present**

**Research Assistant, Bioinformatics, Computer Science, Michigan State University**

- Supervisor: Prof. Yanni Sun
- Working on developing of new algorithm for the challenge of the high error rate and long reads from Third Generation Sequencing like Pacific Biosciences and Oxford Nanopore. Designed the algorithm by modified one of popular error correction method. Implemented the algorithm and tested on simulated sequencing. dataset and real dataset

**May, 2013-Dec, 2014**

**Research Assistant at Laboratory for Ultrafast Nanoscale Imaging and Spectroscopy, Michigan State University**

- Supervisor: Prof. Chong-Yu Ruan
- Working on the project of high-brightness ultrafast electron microscopy. Realized projection of the sample by tuning lens strength. Design and setup several major component for the system. Test the temporal resolution and single-electron experiment

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## Publication

- Du, Nan, and Sun, Yanni. "Improve homology search sensitivity of PacBio data by correcting frameshifts." *Bioinformatics* 32.17 (2016): i529-i537.

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## Conference

**Sep 3 - 7, 2016**

Improve homology search sensitivity of Pacbio data by correcting frameshifts (Proceeding Talk), *15th European Conference on Computational Biology*, The Hague, Netherlands

**July 8 - 12, 2016**

Poster, *24th Annual International Conference on Intelligent Systems for Molecular Biology*, Orlando, Florida, USA

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## Other Experience

**July, 2010-August, 2010**

System Service Representative, IBM Blue Pathway Summer Internship Program, IBM China

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## Skills and Certification

**Programming**

Python, C++, Matlab, Java

**Machine Learning**

Scikit-learn, Tensorflow

**Data Mining**

Weka, Hadoop, MapReduce, MySQL

**Mathematics**

Calculus, Linear Algebra, Complex analysis, Mathematical Physics Equation, Group Theory

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## Selected Awards

**2016**

Travel Fellowship, ECCB 2016

**2010**

Excellent Student, Fudan University

**2007**

Excellent New Student Scholarship, Fudan University