

## NINGKUN ZHOU

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GitHub: <https://github.com/nzhou26>

Portfolio website: <https://nzhou26.github.io/>

### EDUCATION

University of Wisconsin, Madison

**Bachelor of Science**

2015 - 2019

Major: Genetics and Genomics

Minor: Computer Science

### WORK EXPERIENCES

**Amazon China**

*Intern @Ads department*

*summer 2018*

**Guangzhou Institute of Biomedicine and Health, Chinese Academy of Sciences**

*Research Assistant @Dr. Jun He's cryo-EM lab*

*2019 – 2020*

**Bioland Laboratory, Guangzhou**

*Research Assistant @Dr. Jun He's cryo-EM lab*

*2019 – present*

### PROJECTS

***particleSeg: Semantic segmentation tool for particles in cryo-EM micrographs***

- Built customized U-Net like model, reached Mean IoU of 71.07%
- Effectively selects out shiny particles and improves data quality

***cryoCheck: Deep learning-based cryo-EM micrograph quality assessment***

- Built transfer learning models based on popular neural network architectures
- Accurately (ACC=88.32%) removes invalid data to free up human resources

***Help to establish cryo-EM and computing platform***

- Train daily users on sample making, data collection, and data processing
- Built high-end GPU clusters, maintain Linux network and computing environment

***cryoDisplay: cryo-EM data collection notebook web app***

- Web application based on Node.js and MySQL
- Cleanup messy cryo-EM datasets and their parameters

***Autoproteolysis-mediated conformational change of RhsP is required for toxin release***

- Data collection and processing, atomic model building and structural analysis
- Shared co-first authorship, paper on submission

### SKILLSET

**Programming languages:** Python, Java, Bash, C#, JavaScript, HTML, CSS

**Deep learning libraries:** TensorFlow, Keras, Numpy, SciPy, pandas, Matplotlib, OpenCV

**Other skills:** Linux, Dockers, Git, NodeJS, Django, Conda, module, vscode

**Languages:** Proficient in both Chinese and English