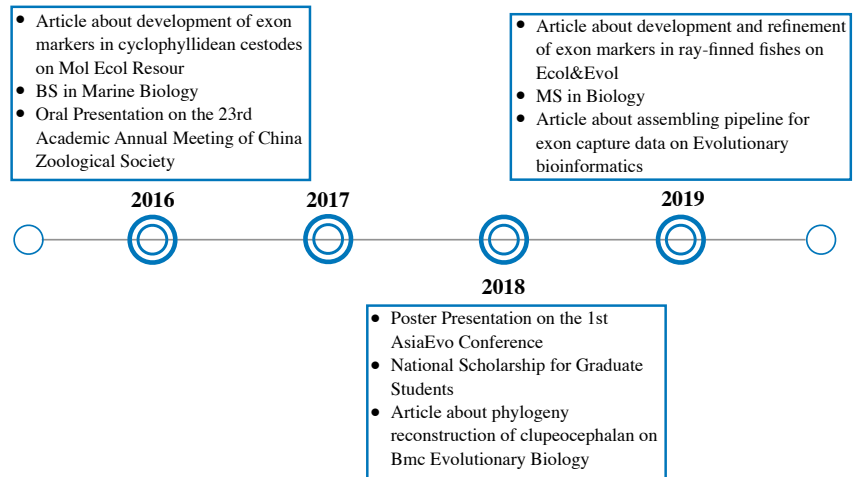

HAO YUAN, MS

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I am a graduate student with a master degree in hydrobiology. I am committed to complete my PhD study in evolutionary biology. I have particular interests in adaptive evolution, which is one of the most interesting fields in evolutionary biology. During my graduate study, I published four articles in peer-reviewed journals, two of which as the first author and two as coauthors. I also designed an algorithm to detect loci under selection. Those experiences helped me in gaining proficient skills in programming and using phylogenomic tools.



EDUCATION

MS in Biology

College of Fishery and Life Science, Shanghai Ocean University

Title of thesis: "Assembly and Filtering of Enriched Data from Exon Capture Across Species"

Advisor: Chenhong Li

June 2019

BS in Marine Biology

College of Fishery and Life Science, Shanghai Ocean University

June 2016

RESEARCH INTERESTS

- Basic theories of adaptive evolution
- Detect sites under positive selection using genomic data

RESEARCH EXPERIENCE

- Designing algorithm to detect loci under positive selection above species level based on evolutionary probability. This method is applicable to any alignable genomic, and it is not sensitive to missing data. This research has not published yet due to time limits in my graduate study.

- Developing streamlined pipeline “Assexon” to assemble exon capture data and processing the resulting assemblies for downstream phylogenetic analysis. (Yuan et al., 2019) **Related publication: 1**
- Evaluating and improving performance of target enrichment for 4,434 refined exon markers in ray-finned fishes (Jiang et al., 2019). **Related publication: 2**
- Designing algorithm to test cross contamination level among samples of clupecocephalan, and evaluating the orthologous relationship among assemblies of clupecocephalan (Straube et al., 2018). **Related publication: 3**
- Designing 3,461 exon markers for target enrichment of cyclophyllidean cestodes (Yuan et al., 2016). **Related publication: 4**

HONORS AND AWARDS

National Scholarship for Graduate Students **2018**

#10 scholarships awarded in the Shanghai Ocean University that year

CONFERENCE PRESENTATIONS

Oral Presentation

Yuan H. (October 2016). *Genome-wide detection of sites under selection using a modified method of evolutionary probability - a case study on adaptive evolution of Homo species*. The 23rd Academic Annual Meeting of China Zoological Society. Wuhan, China.

This talk won second prize for Oral Presentation in that conference

Poster Presentation

Yuan H. (April 2018). *EXpipe: A Assembly Pipeline for Exon Capture Data Across Large Scales of Divergence*. The 1st AsiaEvo Conference, Shenzhen, China.

Related publication: 1

PUBLICATIONS

1. **Yuan, H.**, Atta, C., Tornabene, L., & Li, C. (2019). Assexon: Assembling Exon Using Gene Capture Data. *Evolutionary Bioinformatics*. <https://doi.org/10.1177/1176934319874792>
2. Jiang, J., **Yuan, H.**, Zheng, X., et al. (2019). Gene markers for exon capture and phylogenomics in ray-finned fishes. *Ecol Evol*, 9: 3973– 3983. <https://doi.org/10.1002/ece3.5026>
3. Straube, N., Li, C., Mertzen, M., **Yuan, H.**, Moritz, T (2018). A phylogenomic approach to reconstruct interrelationships of main clupecocephalan lineages with a critical discussion of morphological apomorphies. *Bmc Evolutionary Biology*, 18, 158. Doi:10.1186/s12862-018-1267-1
4. **Yuan, H.**, Jiang, J., Jiménez, F. A., Hoberg, E. P., Cook, J. A., Galbreath, K. E. and Li, C. (2016). Target gene enrichment in the cyclophyllidean cestodes, the most diverse group of tapeworms. *Mol Ecol Resour*, 16: 1095-1106. doi:10.1111/1755-0998.12532

TECHNICAL SKILLS

- Proficient programming skills in Perl, Shell and R, and developing new algorithms.

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- Bioinformatics tools: Phylogenetic analysis (e.g. ASTRAL, IQTREE, BEAST), Population genetic analysis (e.g. STRUCTURE), Sequences searching and alignment (e.g. BLAST, USEARCH, MUSCLE, Mauve).
 - Molecular techniques: Library construction for next generation sequencing, Target gene enrichment, DNA extraction and electrophoresis.
 - Solving problems independently, but also being a good team worker.
 - Having strong motivation and abilities to learn new skills, especially in new programming and data analysis skills.

LANGUAGES

- English: Fluent
- Chinese: Native

REFERENCES

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Assistant Professor, School of Aquatic and Fishery Sciences
Curator of Fishes, Burke Museum of Natural History and Culture
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