

NAUFAL RAHMAN AVICENA

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EDUCATION

UNIVERSITY OF CHINESE ACADEMY OF SCIENCES

Beijing, China

Master of Science (MSc.) in Ecology

2022 - 2026

Topic: Drivers and Outlook of Elephant-caused Human Casualties in Tropical Asia

Host Institute: Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences

Advisor: Prof. Ahimsa Campos-Arceiz

Current GPA: 3.94/4.00

UNIVERSITY OF NOTTINGHAM MALAYSIA

Semenyih, Malaysia

Bachelor of Science with Honours (BSc. Hons) in Environmental Science

2019 - 2022

Final Year Project: CNN-based Classification of Elephant and Non-Elephant Sounds

Advisor(s): Dr. Ee Phin Wong, Prof. Tomas Maul, Dr. Yen Yi Loo

Awarded First Class

SCHOLARSHIPS

ANSO Scholarship for Young Talents (Master's), Alliance of National Science Organizations for the Belt and Road Regions, 2022-2026

RESEARCH EXPERIENCE

UNIVERSITY OF NOTTINGHAM MALAYSIA

Semenyih, Malaysia

Research Associate, School of Environmental and Geographical Sciences

2021 - 2022

Designed and implemented a Convolutional Neural Network using Python with Pytorch to classify elephant vocalizations against non-elephant sounds. **Trained and validated** the model with >6,000 elephant sound clips collected in Sri Lanka and Malaysia. The model is currently being prototyped for human-elephant conflict mitigation in oil palm plantations in Johor, Malaysia.

Synthesized and evaluated >100 peer-reviewed articles on global mangrove population genetics, contributing to a meta-analysis manuscript currently being prepared for publication.

Collected and analyzed a pre- and post-course survey data from participants of the Leadership in Wildlife Conservation Course (LWCC 2022) to understand the effectiveness of game-based conservation teaching.

UNIVERSITI SAINS MALAYSIA

Perak, Malaysia

Research Assistant, School of Biological Sciences

06/2021 - 09/2021

Collected ~360 hours of observational field data on the Southern pig-tailed macaques (*Macaca nemestrina*) behavior in a forest-oil palm matrix of Segari Melintang Forest Reserve, Perak, Malaysia.

EXTERNAL AND INTERNAL FUNDING

XTBG Funding Support for Publications in High-Impact Journal

Awarded to Naufal Rahman Avicena for the publication of an article in a Top 10% Journal (*Biological Conservation*)

Total Amount: CNY 150,000 ~ USD 20,900

ANSO Grant for Master's Research

Awarded to Naufal Rahman Avicena

Total Amount: CNY 12,000 ~ USD 1,600

RESEARCH INTERESTS

Ecological modelling
Landscape ecology
Human-wildlife conflict and coexistence
Machine learning and deep learning
Natural language processing

TECHNICAL SKILLS

R Programming Language
Python (Pytorch, Tensorflow, Langchain, Langextract)
Geographic Information Systems (QGIS, ArcGIS Pro, Google Earth Engine, ERDAS Imagine)
Microsoft Azure

PUBLICATIONS

1. **Avicena, NR**; Loo, YY; Maul, T; Thong, N; Wong, CCT; de Silva, S; Saaban, S; Wong, EP. (2025). Living with elephants: Deep learning models performance in examining Asian elephant (*Elephas maximus*) sounds from Sri Lanka and Malaysia with considerations for application. *Biological Conservation* 309: 111272.
2. Loo, YY; **Avicena, NR**; Thong, N; Haque, AM; Nhlabatsi, YT; Abakar, SYA; Ng, KH; Wong, EP. (2024). WildTechAlert: Deep Learning Models for Real-Time Detection of Elephant Presence Using Bioacoustics in an Early Warning System to Support Human-Elephant Coexistence. *Advances in Brain-Inspired Cognitive Systems (BICS 2023). Lecture Notes in Artificial Intelligence* 14374: 385-399.
3. Loo, YY; **Avicena, NR**; Thong, N; Wong, EP. (2025). The Use of Bioacoustics in Biodiversity Monitoring and Wildlife Conservation in Panty Forest Reserve, Johor. *Malaysian Forester* 88 (2): 316-332.
4. Mammides, C; Gu, H; **Avicena, NR**; Nimalrathna, T; Papadopoulos, H; Campos-Arceiz, A. Emerging Applications of Large Language Models in Ecology and Conservation Science. *Conservation Biology* [Minor Revision]
5. **Avicena, NR**; Mammides, C; Maul, T; Lechner, A; Thu, WP; Aung, N; Ram, AK; Kshetry, A; Saaban, S; Goossens, B; Wong, EP; Campos-Arceiz, A. Human costs of conserving Asian elephants. [In progress]

MEDIA APPEARANCE

1. CGTN. (2025). UN@80: Indonesian student in China applies AI to foster harmony between humans and elephants. Available at: <https://news.cgtn.com/news/2025-08-11/UN-80-Indonesian-student-in-China-applies-AI-to-human-animal-harmony--1FKRh750QsU/p.html>

REFERENCES

1. **Prof. Ahimsa Campos-Arceiz**
Principal Investigator, Megafauna Ecology and Conservation Group
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2. **Prof. Tomas Maul**
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University of Nottingham Malaysia
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3. **Dr. Christos Mammides**
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