

# Curriculum Vitae

(Update to 7/2024)

## Nguyen Cong Nghia, Ph.D.

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**Research Interests:** seismology, earthquake detection and location, focal mechanism inversion, stress inversion, seismic tomography

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## Working experience:

8/2023 - Postdoctoral fellow at Institute of Earth Sciences, Academia Sinica

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## Education

- 2023 Doctor of Philosophy, Taiwan International Graduate Program - Earth System Science, National Central University and Institute of Earth Sciences – Academia Sinica  
Thesis topic: *Seismological study of recent significant events and regional crustal structures in Southeast Asia*  
Advisors: Prof. Dr. Bor-Shouh Huang; Prof. Dr. Po-Fei Chen
- 2015 Master of Science, Department of Earth Sciences – National Taiwan Normal University, Taipei, Taiwan  
Thesis topic: *The deformation and metamorphic evolution of Ailaoshan massif, southwest China*  
Advisors: Prof. Dr. Mary Meng-Wan Yeh; Prof. Dr. Tung-Yi Lee
- 2013 Bachelor, Faculty of Geology – Hanoi University of Science, Vietnam National University, Hanoi, Vietnam
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## Publications:

1. Phung, V. B., Huang, B.-S\*, **Nguyen, C.N.**, Nguyen, V.D., Nguyen, L.M, Nguyen, A.D., Le, Q.K., Pham, T.T., Ha, T.G., Dinh, Q.V., Ha, V.L., Lavrentiadis, G., Chan, C.H., Pham, D.H, 2024. Evaluation of Ground Motion Models for Northern Vietnam based on ground motion records of the 2020 Moc-Chau Earthquake. Accepted on Earthquake Spectra.
2. Long, H.V.\* , Huang, H.-H.\* , Huang, B.-S., Nguyen, L.M., Van Duong, N., Ha, T.G., Le, Q.K., Van Dinh, Q., Le, T.S., Nguyen, T.H., **Nguyen, C.N.**, Smith, K.K., Pham, T.T., 2024. Geotectonic architecture beneath Northern Vietnam revealed by local earthquake tomography combining seismic data from multiple networks. Tectonophysics, 230402. <https://doi.org/10.1016/j.tecto.2024.230402>

3. Van-Bang Phung\*, Yu-Wen Chang, Chin-Hsiung Loh, Bor-Shouh Huang, Vinh-Long Ha, **Cong-Nghia Nguyen**, and Dinh-Hai Pham. Regional and Site-Specific Ground Motion Model for Probabilistic Seismic Hazard Analysis in Taiwan: A case study of I-Lan. *Journal of Earthquake and Tsunami*. <https://doi.org/10.1142/S179343112450009X>
4. **Nguyen, C. N.**, Huang, B.\*, Lee, T., Chen, P., Nguyen, V., Narag, I., Bautista, B. C., & Melosantos, A. (2023). Slab tearing and lithospheric structures in Luzon island, Philippines: Constraints from P-and S-wave local earthquake tomography. *Frontiers in Earth Science*, 11, 1213498. <https://doi.org/10.3389/feart.2023.1213498>
5. Phung, V.B.\*, **Nguyen, C.N.** and Huang, B.S., 2023. On the development of region and site-specific ground motion prediction model for the region of I-lan, Taiwan. *Engineering Geology*, 312, p.106933; doi: <https://doi.org/10.1016/j.enggeo.2022.106933>
6. **Nguyen, C. N.**, Van, D.N.\*, Thi, G.H., Le, M.N., Huang, B.S., Tien, H.N., Le Quang, K. and Huu, H.N., 2022. Automatic earthquake detection and phase picking in Muong Te, Lai Chau region: an application of machine learning in observational seismology in Vietnam. *Vietnam Journal of Earth Sciences*, 44(3), pp.430-446; doi: <https://doi.org/10.15625/2615-9783/17253>
7. **Nguyen, C.N.**, Huang, B.S.\* , Duong, N.A., Le, Q.K., Ha, T.G., Van, D.Q., Long, H.V. and Chen, P.F., 2022. Characteristics of earthquake source and ground motions in Northern Vietnam investigated through the 2020 Moc Chau M5.0 earthquake sequence. *Journal of Asian Earth Sciences*, 229, p.105144; doi: <https://doi.org/10.1016/j.jseaes.2022.105144>

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#### **Submitted manuscripts:**

1. NGUYEN, Le-Minh, NGUYEN, Van-Duong\*, **Nguyen, Cong-Nghia**, Ha, Thi-Giang, Ha, Vinh-Long, Nguyen, Tien-Hung, Le, Quang-Khoi, Unveiling the Seismic Attenuation Characteristics in the Mantle Beneath Southeast Asia: Insights into Mantle Dynamics and Tectonic Processes.

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#### **Conference presentations:**

1. Emi ULFIANA, Po-Fei CHEN, Bor-Shouh HUANG, **Nghia Cong NGUYEN**, Teresito BACOLCOL. Estimating Crustal Thickness in the Northern Philippines Through Ambient Noise Autocorrelation. AOGS Meeting 2024.
2. **Nguyen C. N.**, Huang, B. S., Nguyen, V. D., Ha, T. G., Dinh, Q. V., Nguyen, L. M., Pham, T. T., Nguyen, T. H., Le, Q. K., Nguyen, H. H, Chen, P. F., 2022. Source characteristics of the

ML4.9 Muong Te earthquake sequence, northwest Vietnam from earthquake location and focal mechanism inversion. Taiwan Geosciences Assembly 2022

3. **Nguyen, C.N.**, Huang, B.S., Chen, P.F., Nguyen, V.D., Ku, C.S., Huang, W.G., Bautista, B.C., Narag, I., Sevilla, W.I., Arnaldo, M., 2019. Determine the Moho depth and sedimentary layer thickness in a subduction zone: Results of receiver function analysis from North Philippines. EGU 2019

4. **Nguyen, C.N.**, Huang, B.S., Chen, P.F., Nguyen, V.D., Ku, C.S., Huang, W.G., Bautista, B.C., Narag, I., Sevilla, W.I., Arnaldo, M., 2018. Determine the Moho depth and sedimentary layer thickness in a subduction zone: Results of receiver function analysis from North Philippines. AOGS 2018.

5. **Nguyen, C.N.**, Huang, B.S. and Chen, P.F., 2017. Constraint on the magma sources in Luzon Island Philippines by using P and S wave local seismic tomography. AGU 2017.

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### **Research skills:**

- Seismological interpretation of earthquake sequence, tomographic image
- Using Deep-learning-based methods in analyzing seismic waveforms and making seismic catalogs
- Apply seismological methods to investigate geological structures, especially in South East Asia
- Computing methods:
  - Python, MatLab, Fortran
  - Python-based seismological packages: Obspy, Matplotlib, PyGMT
  - Seismic tomography software: LOTOS (Koulakov, 2009); TomoDD (Zhang and Thurber, 2003)
  - Receiver function analysis using Lupei Zhu's code
  - Focal mechanism inversion
  - Stress inversion
  - Application of deep-learning seismic pickers and framework to monitor earthquakes
- Geological skills: structural fieldwork, petrological analysis under thin section, U-Pb zircon dating
- Reviewer for International Journal of Disaster Management, Vietnam Journal of Earth Sciences, MDPI Sustainability, MDPI Applied Sciences.

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### **Grants and awards:**

1. Ministry of Science and Technology (R.O.C) student travel grant 2017 (NTD52,000).
2. AGU Student Travel Grant 2017 (US\$1,000)