Nguyen Manh Son

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Research Interests

- Machine Learning and Graph Deep Learning
- Chemometrics
- Artificial Intelligence for Science
- Drug Discovery and Development

Education

Vietnam National University - Hanoi University of Science — Hanoi, Vietnam
Advanced Program of Chemistry — *2021 - 2025*

Samsung Innovational Campus - National Innovation Center — Vietnam
Artificial Intelligence — *2024*

Research Experience

AI - Analytical Chemistry Laboratory — November 2023 – Present
Vietnam National University - Hanoi Univerisity of Science — *Hanoi, Vietnam*

Natural Products Chemistry Laboratory — June 2023 – Present
Vietnam National University - Hanoi Univerisity of Science — *Hanoi, Vietnam*

BioChemistry Laboratory - Institute of Natural Products Chemistry — June 2023 – March 2024
Vietnam Academy of Science and Technology (VAST) — *Hanoi, Vietnam*

Computational Chemistry Laboratory — June 2022 – May 2023
Vietnam National University - Hanoi Univerisity of Science — *Hanoi, Vietnam*

Teaching

Graduate Teaching Assistant

- CH35 – Statistics and Applied Mathematics for Chemistry (2025).
- CH34 – Chemometrics in Analytical Chemistry (2024).
- CH34 – Statistics and Applied Mathematics for Chemistry (2024).
- CH33 – Statistics and Applied Mathematics for Chemistry (2023).

Undergraduate Teaching Assistant

- CHE2116 – Analytical Chemistry (2025).
- CHE2129 – Advanced Analytical Chemistry (2025).
- CHE2129 – Advanced Analytical Chemistry (2024).

Publications

Papers

- Bui Thi Lan Phuong, Hoang Thi Bich, Nguyen Van Phuong, Bui An Duy, Nguyen Duc Phong, **Nguyen Manh Son**, Pham Gia Bach, Nguyen Thi Cam Ha, Ta Thi Thao, Nguyen Thi Kieu Anh. *"Geographical Discriminant and Classification of Cinnamomum cassia collected in Vietnam using ATR-FTIR coupled with machine learning Algorithms"*. ChemChemTech. vol. 68. no. 5. 2025.
- **Nguyen Manh Son**, Nguyen Duc Phong, Bui Xuan Thanh, Ta Thi Thao, Le Thi Hong Hao, Nguyen Duc Thanh. *"Applications of machine learning coupled with computer vision, electronic nose and untargeted analysis for food quality control"*. Vietnam Journal of Food Control. vol. 7, no. 3, pp. 313-328, 2024.
- Nguyen Duc Phong, **Nguyen Manh Son**, Nguyen Manh Ha, Bui Xuan Thanh, Le Thi Hong Hao, Ta Thi Thao, Nguyen Thi Van Anh, Nguyen Duc Thanh. *"Machine learning and deep learning models applied to identification and classification of mango"*. Vietnam Journal of Food Control. vol. 7. no. 3. 2024.
- Nguyen Duc Phong, **Nguyen Manh Son**, Nguyen Dieu Linh, Nguyen Thi Minh Loi, Bui Xuan Thanh, Pham Gia Bach, Le Si Hung, Ta Thi Thao. *"Multivariate regression models based on UV full spectra for the simultaneous determination of Tetracycline, Penicillin G and Cephalexin in different dosage forms"*. Journal of Analytical Sciences, vol. 30. no. 2. 2024.

Conferences

- Nguyen Duc Phong, **Nguyen Manh Son**, Tran Phuong Dung, Pham Huu Vang, Nguyen Duc Hoan, Nguyen Huy Van, Dong Thi Thuy Linh, Nguyen Thi Van Anh, Vu Huong Thuy, Ta Thi Thao. *"Quality control of herbal medicine using IR fingerprint spectra combined with machine learning: A case study of Polyscias fruticosa (L.) Araliaceae."*. analytica Vietnam Conference, 2025.
- Nguyen Duc Thanh, **Nguyen Manh Son**, Nguyen Duc Phong, Hoang Tuan Phong, Ninh Duc Ha, Nguyen Thi Van Anh, Le Thi Hong Hao, Nguyen Thi Kim Thuong, Ta Thi Thao. *"Rapid detection of orange juice adulteration based on voltammetric fingerprint combined with machine learning."*. analytica Vietnam Conference, 2025.
- **Nguyen Manh Son**, Do Ngoc Thuy, Nguyen Thi Huong, Le Ngoc Hung, Phung Van Trung, Ta Thi Thao, Nguyen Dang Toan Chuong. *"UHPLC-QTOF-MS based metabolomics, cytotoxicity against HT29 cells and molecular docking study for Peliosanthes micrantha rhizomes"*. 5^{th} International Conference on Applied Science and Engineering, 2025.
- **Nguyen Manh Son**, Nguyen Duc Phong, Bui Xuan Thanh, Le Thi Hong Hao, Ta Thi Thao, Nguyen Duc Thanh. *"Applications of Machine Learning and Computer Vision Combined with Electronic Nose and Untargeted Analysis in Food Quality Control"*. International Food Control Conference, 2024.
- **Nguyen Manh Son**, Nguyen Duc Phong, Nguyen Quoc Hieu, Nguyen Van Dai, Tran Khanh Du, Vu Tien Dung, Ta Thi Thao, Bui Xuan Thanh, Nguyen Trong Hieu, Vu Duong, Nguyen Thi Van Anh, Nguyen Duc Thanh. *"Predicting Orange's Sweetness using Deep Learning Coupled with Computer Vision"*. International Food Control Conference, 2024.
- Nguyen Duc Phong, **Nguyen Manh Son**, Nguyen Manh Ha, Bui Xuan Thanh, Le Thi Hong Hao, Ta Thi Thao, Nguyen Thi Van Anh, Nguyen Duc Thanh. *"Machine learning and deep learning models applied to identification and classification of mango"*. International Food Control Conference, 2024.

Skills

Languages: English, Korea.

Programming Languages: Python, R

Frameworks: PyTorch, TensorFlow

Embedded Systems/IoT: Arduino, ESP32

Awards

- First Prize, National Poster Award, analytica conference, 2025.
- First Prize, Poster Presentation Award, International Food Control Conference, 2024.
- Consolation Prize, Poster Presentation Award, International Food Control Conference, 2024.
- Academic Encouragement Scholarship, 2024.
- Second Prize, Student Science Research Award 2024, Department level.
- Third Prize, Student Science Research Award 2024, School level.
- VietChem Schoolarship, 2024.
- Students Achieve Excellent Academic Results, 2023.
- Student with Five Good Merits, City level, 2023.
- Student with Five Good Merits, VNU level, 2023.
- Student with Five Good Merits, School level, 2023.
- Outstanding Student with Five Good Metrics, School level, 2023.
- Students Achieve Excellent Academic Results, 2022.
- Outstanding Young Person, School level, 2022.

Outeach Experience

HUS Chemistry Club, VNU - Hanoi University of Science

- Member of the board of directors.
- Lead and product ChemHUS-Sharing podcast.

The Dolittles Project - The Animal Rescue Project