Truc-Ly **Le-Huynh**

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A young researcher with expertise in microbiology and biostatistics. An avid R user for data analysis, visualization, and automation. Passionate about open science and the development of digital tools for research.

Technical Skills

- **Statistics** || Biostatistics, Frequentist and Bayesian Inference, Bayesian Modelling
- **Programming Languages** || R (advanced), Python, SAS
- **Markup Languages** || RMarkdown, LaTeX
- **DevOps Tools** || Git, GNU Make
- **Visualization** || ggplot2, Shiny
- **Laboratory** ||
  - Water quality analysis: Chlorophyll, COD, BOD, TSS, TN-TP, NO_2-N, NO_3-N, NH_4-N, PO_4-P, etc.
  - Molecular Biology: DNA extraction, PCR/qPCR, Agarose Gel Electrophoresis, etc.
  - Molecules analysis: High Performance Liquid Chromatography (HPLC), Fluorescence Spectroscopy, Spectrophotometry
- **Others** || Reproducible research, R package development

Education

Doctor of Philosophy - PhD in Engineering — *Nagasaki, Japan*
Nagasaki University — *2018 - 2023*
- Thesis: Statistical Investigation into the Effects of Climate and Eutrophication on the Occurrence of Cyanobacteria in Small Ponds and Reservoirs
- Developed a statistical model to address the zero-inflation issue in toxic cyanobacterial data, resulting in predictions for (1) presence probability, (2) abundance, and (3) probability of exceeding the WHO alert level of toxic cyanobacteria

Master of Engineering - MEng in Water and Environmental Engineering — *Nagasaki, Japan*
Nagasaki University — *2016 - 2018*
- Thesis: Statistical Analysis on the Relationship among Environmental Factors, Microcystin Synthesis Gene, and Microcystin Degradation Gene

Bachelor of Science - BS in Environmental Engineering Technology — *Ho Chi Minh City, Vietnam*
Vietnam National University – Ho Chi Minh City University of Science — *2012 - 2016*

Research Experience

Project Researcher — *Nagasaki, Japan*
Water Treatment Laboratory, Nagasaki University — *April 2023 - July 2023*

Research Assistant — *Nagasaki, Japan*
Biological Treatment and Ecological Engineering Laboratory, Nagasaki University — *September 2018 - March 2019*

Technical Assistant — *Nagasaki, Japan*
Biological Treatment and Ecological Engineering Laboratory, Nagasaki University — *January 2017 - March 2019*

Publications

1. Hoang, T. T. T., Ichinose, K., Morimoto, S., Furukawa, K., **Le-Huynh, T.-L.**, Kawakami, A. (2022). Measurement of anti-suprabasin antibodies, multiple cytokines and chemokines as potential predictive biomarkers for neuropsychiatric systemic lupus erythematosus. *Clinical Immunology*, 237(March), 1–8. https://doi.org/10.1016/j.clim.2022.108980
2. Angalika, M. W. S., Suzuki, S., **Le-Huynh, T.-L.**, Itayama, T., Tanaka, W. (2022). Assessing nutrient budget of ungauged catchment using intermittent water quality markers. *Maejo International Journal of Energy and Environmental Communication*, 4(3), 1–10. https://doi.org/10.54279/mijeec.v4i3.247534
3. **Le-Huynh, T.-L.**, Iwami, N., Whangchai, N., Gutierrez, R., Shimizu, K., Itayama, T. (2022). Statistical analysis of the effects of environmental factors and fish species on class-sorted phytoplankton composition in aquaculture ponds in northern Thailand. *Maejo International Journal of Energy and Environmental Communication*, 4(3), 32–38. https://doi.org/10.54279/mijeec.v4i3.247635
4. **Le-Huynh, T.-L.**, Itayama, T., Mitsunaga, K., Angalika, M., Suzuki, S. (2022). Application of hurdle Poisson model to predict the abundance of toxic cyanobacteria Microcystis in reservoirs. *Maejo International Journal of Energy and Environmental Communication*, 4(3), 47–51. https://doi.org/10.54279/mijeec.v4i3.247529

Selected Presentations

1. **Le-Huynh, T.-L.**, Iwami, N., Praphrute, R., Whangchai, N., Gutierrez, R., Shimizu, K., Itayama, T., Statistical analysis on phytoplankton population at hypertrophic ponds in northern Thailand [Oral presentation], *The 57th Annual Conference of Japan Society on Water Environment*, Ehime, Japan, March 2023.

2. **Le-Huynh, T.-L.**, Itayama, T., Mitsunaga, K., Angalika, M., Suzuki, S., Predict toxic cyanobacteria Microcystis in reservoirs by Bayesian hurdle Poisson model [Oral presentation], *1st Campus Asia Program International Symposium*, Nagasaki, Japan, February 2023.
3. **Le-Huynh, T.-L.**, Itayama, T., Mitsunaga, K., Using Bayesian hurdle Poisson model to predict cyanobacterial cell densities in Nagasaki reservoirs [Oral presentation], *The 56th Annual Conference of Japan Society on Water Environment*, Toyama, Japan, March 2022.
4. **Le-Huynh, T.-L.**, Mitsunaga, K., Itayama, T., A Bayesian model for predicting the growth of toxic Microcystis from air temperature and trophic state index [Oral presentation], *The 3rd International Conference on Renewable Energy, Sustainable Environmental and Agricultural Technologies*, Chiangmai, Thailand, December 2021.
5. **Le-Huynh, T.-L.**, Itayama, T., Nguyen, T. H. G., Xia, D., Shimizu, K., Iwami, N., Okano, K., Maseda, H., Praphrute, R., Ruangdet, K., Gutierrez, R., Whangchai, N., Influence of environmental factors on Microcystins degradation bacteria and toxigenic cyanobacteria bloom: a Bayesian approach [Poster presentation], *The NaToxAq Conference on Natural Toxins: Environmental Fate & Safe Water Supply*, Brno, Czech Republic, September 2020.

Selected Awards

Planetary Health Research Fellowship
Nagasaki University, Japan *2022 - 2023*

Asian Student Foundation Scholarship
Asian Student Foundation, Japan *2017 - 2019*

Monbukagakusho Honors Scholarship for International Students
Japan Student Services Organization (JASSO), Japan *2016 - 2017*

Second Prize in Water Resources Ideas Contest
Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), Germany *2016 -*

The CHEER for Viet Nam Scholarship Award for Innovation and Creativity
CHEER for Viet Nam organization, USA *2015 -*