

NGUYEN VAN THIEU

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EDUCATION

Master in Computer Science

10/2018 - 04/2021

Hanoi University of Science and Technology, Hanoi, Vietnam
School of Information and Communication Technology

- GPA: 3.72/4
- Thesis: Time series analysis for forecasting problem

Bachelor of Information Technology

08/2013 - 08/2018

Hanoi University of Science and Technology, Hanoi, Vietnam
School of Information and Communication Technology

- ICT Talented Engineer Program, GPA: 3.03/4
- Thesis: Building a self-organizing neural network for forecasting future cloud resources consumption

TECHNICAL SKILLS

OS Preferences: Windows, GNU/Linux

Programming:

- **Language:** Python, Java, PHP, Javascript, C/C++
- **AI Frameworks:** Numpy, Pandas, Scikit-Learn, Tensorflow, Keras, Pytorch
- **Web Development:** HTML, CSS, Materialize, Bootstrap, Angular 2, Flask, Nodejs, Express, Spring Framework
- **App Development:** Java Android, Ionic Framework
- **Database:** MySQL, MongoDB, PostgreSQL

EXPERIENCE

Phenikaa University, Hanoi, Vietnam: Lecturer and Researcher

01/2022 – Now

- Full-time teaching at the Faculty of Computer Science.
- Taught courses: Python for Artificial Intelligence, Data Analysis Programming with Python, Introduction to Data Science and Artificial Intelligence, Introduction to Database.
- Research works: Developing open-source libraries for optimization problems inspired by nature, machine learning, and AI (e.g., mealy, opfunu, mafese, MetaCluster, permetrics,...). Main problems related to feature selection, feature extraction, neural architecture design.

Artificial Intelligence Independent Research Group (AIIR Group), Vietnam: Co-founder

03/2020 – Now

- Main work: Applying artificial intelligence and optimization in both academic and industrial settings.
- Current domains include engineering (with a focus on groundwater management and streamflow prediction), path planing for UAVs, WSN optimization, resource consumption and energy saving in cloud environment, optimization in geology and mining.

High Performance Computing Center (HPCC - HUST), Vietnam: Researcher

08/2017 - 12/2021

- Leader of the AI research team, which includes five members.
- Topic: Optimization (Metaheuristic Algorithms), AI, Machine Learning, Deep Learning
- Applied machine learning and deep learning to forecast time-series data (Worldcup 1998 requests, Google cluster trace).
- Designed an improved time-series forecasting model based on neural networks (self-structuring neural networks, functional link neural networks, ELM, MLP, self-organized network inspired by immune algorithm (SONIA), etc.) and computational intelligence techniques (swarm optimization, human-inspired optimization, etc.).
- Designed an auto-scaling system that optimizes energy consumption in cloud servers by turning servers off or on as needed.

- Topic: Estimating system log templates using deep transfer learning.
- Worked on data-driven methods such as abstracting execution logs (AEL - heuristics), Drain (parsing tree), CRF (NLP), and Nulog (neural network).
- Designed a deep transfer learning model (DTNN - NLP) based on an extension of CRF that incorporates semantic information at the word and character level in NLP, and uses transfer learning based on deep neural networks (LSTM and GRU).

- Topic: Meta-heuristics and Its Application
- Applied bio-inspired and meta-heuristic algorithms to solve combinatorial optimization problems, as well as problems in robotics and computer simulations.
- Optimized the path planning of a swarm of UAVs using the CoppeliaSim simulator.

PUBLICATIONS

- **Van Thieu N**, Mirjalili S. MEALPY: An open-source library for latest meta-heuristic algorithms in Python. *Journal of Systems Architecture*. 2023 Jun 1;139:102871.
- **Van Thieu N**, Barma SD, Van Lam T, Kisi O, Mahesha A. Groundwater level modeling using Augmented Artificial Ecosystem Optimization. *Journal of Hydrology*. 2023 Feb 1;617:129034.
- Nguyen BM, Tran T, **Nguyen T**, Nguyen G. An Improved Sea Lion Optimization for Workload Elasticity Prediction with Neural Networks. *International Journal of Computational Intelligence Systems*. 2022 Oct 29;15(1):90.
- Xie C, Nguyen H, Bui XN, **Nguyen VT**, Zhou J. Predicting roof displacement of roadways in underground coal mines using adaptive neuro-fuzzy inference system optimized by various physics-based optimization algorithms. *Journal of Rock Mechanics and Geotechnical Engineering*. 2021 Dec 1;13(6):1452-65.
- **Nguyen T**, Nguyen T, Vu QH, Huynh TT, Nguyen BM. Multi-objective sparrow search optimization for task scheduling in fog-cloud-blockchain systems. In 2021 IEEE International Conference on Services Computing (SCC) 2021 Sep 5 (pp. 450-455). IEEE.
- Ahmed AN, Van Lam T, Hung ND, **Van Thieu N**, Kisi O, El-Shafie A. A comprehensive comparison of recent developed meta-heuristic algorithms for streamflow time series forecasting problem. *Applied Soft Computing*. 2021 Jul 1;105:107282.
- **Nguyen T**, Kobayashi S, Fukuda K. Logdtl: Network log template generation with deep transfer learning. In 2021 IFIP/IEEE International Symposium on Integrated Network Management (IM) 2021 May 17 (pp. 848-853). IEEE.
- Nguyen BM, Nguyen T, **Nguyen T**, Do BL. MPoC-A Metaheuristic Proof of Criteria Consensus Protocol for Blockchain Network. In 2021 IEEE International Conference on Blockchain and Cryptocurrency (ICBC) 2021 May 3 (pp. 1-8). IEEE.
- Nguyen BM, Hoang B, **Nguyen T**, Nguyen G. nQSV-Net: a novel queuing search variant for global space search and workload modeling. *Journal of Ambient Intelligence and Humanized Computing*. 2021 Jan;12:27-46.
- Nguyen BM, Tran T, **Nguyen T**, Nguyen G. Hybridization of galactic swarm and evolution whale optimization for global search problem. *IEEE Access*. 2020 Apr 20;8:74991-5010.
- **Nguyen T**, Nguyen G, Nguyen BM. EO-CNN: an enhanced CNN model trained by equilibrium optimization for traffic transportation prediction. *Procedia Computer Science*. 2020 Jan 1;176:800-9.
- **Nguyen T**, Hoang B, Nguyen G, Nguyen BM. A new workload prediction model using extreme learning machine and enhanced tug of war optimization. *Procedia Computer Science*. 2020 Jan 1;170:362-9.
- **Thieu Nguyen**, Nguyen BM, Nguyen G. Efficient time-series forecasting using neural network and opposition-based coral reefs optimization. *International Journal of Computational Intelligence Systems*. 2019;12(2):1144-61.
- **Nguyen T**, Nguyen BM, Nguyen G. Building resource auto-scaler with functional-link neural network and adaptive bacterial foraging optimization. In *Theory and Applications of Models of Computation: 15th Annual Conference*,

TAMC 2019, Kitakyushu, Japan, April 13–16, 2019, Proceedings 15 2019 (pp. 501-517). Springer International Publishing.

- **Nguyen T**, Tran N, Nguyen BM, Nguyen G. A resource usage prediction system using functional-link and genetic algorithm neural network for multivariate cloud metrics. In 2018 IEEE 11th conference on service-oriented computing and applications (SOCA) 2018 Nov 20 (pp. 49-56). IEEE.

AWARDS AND CERTIFICATIONS

- Achieved the Erasmus+ scholarship for International Exchange Student to University of Luxembourg
+ Organizations: European Union (EU) and University of Luxembourg
+ Date: 07/2019
- Achieved the NII International Internship Program for International Exchange Student to NII, Japan
+ Organizations: National Institute of Informatics (NII), Japan
+ Date: 02/2020

REFERENCES

Prof. Fukuda Kensuke

*National Institute of Informatics, Japan
Department of Informatics, Graduate University for Advanced Studies (SOKENDAI), Japan*

Assoc. Prof. Ozgur Kisi

Civil Engineering Department, University of Applied Sciences, Lübeck, Germany

Prof. Seyedali Mirjalili

Centre for Artificial Intelligence Research and Optimization, Torrens University Australia, Australia

Dr. Hoang Nguyen

Mining Faculty, Hanoi University of Mining and Geology, Hanoi, Viet Nam

Prof. Ahmed El-Shafiee

*Civil Engineering Department, Faculty of Engineering, University of Malaya, Kuala Lumpur, Malaysia
National Water Center, United Arab Emirates University, Al Ain P.O. Box 15551, United Arab Emirates*

Dr. Ali Najah Ahmeda

Institute of Energy Infrastructure (IEI), Civil Engineering Department, College of Engineering, Universiti Tenaga Nasional (UNITEN), Selangor, Malaysia

Dr. Binh Minh Nguyen

School of Information and Communication Technology, Ha Noi University of Science and Technology, Ha Noi, Viet Nam.

Dr. Giang Nguyen

Institute of Informatics, Slovak Academy of Sciences, Bratislava, Slovakia.

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