Nasrulloh Ratu Bagus Satrio Loka

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Summary

I'm a postdoctoral researcher in the Machine and Human Intelligence group at the University of Helsinki. My current research focuses on amortized inference and its applications, particularly in black-box optimization. My interests include Bayesian optimization, deep neural networks, and various applications of machine learning in science and engineering.

Education

Ghent University Belgium
PhD in Information Technology *2023*

- Ph.D. Thesis: Bayesian Optimization for Engineering Design and Process Optimization

Hiroshima University Japan
Master Degree in Information Engineering *2019*

- Master Thesis: Two-dimensional Neural Network for One-dimensional Data

Brawijaya University Indonesia
Bachelor Degree in Informatics *2016*

- Degree Project: Slum identification on satellite imagery using Support Vector Machine

Relevant Experience

Machine and Human Intelligence Research Group Finland
Postdoctoral Researcher *2024-present*

- Developing amortized inference methods for probabilistic ML tasks.
- Assisting in a Generative AI seminar course, covering modern large language models and generative image models.

Surrogate Modelling Research Group, IMEC-UGent Belgium
Ph.D. Researcher *2019 - 2024*

- Working on various engineering-related machine learning projects.
- Involved in Twin ECS Project (EU Horizon 2020).
- Took part in Flanders AI Research program, working on data-efficient machine learning.
- Assisting machine learning course lab activity and co-supervising master student thesis.

Pacmann Academy Online-Indonesia
Content developer and lecturer (part time) *2022*

- Teaching on introduction to machine learning and advanced machine learning course.
- Creating course material for advanced machine learning course.

Selected Publications

(🎓 full publication list)

P E. Chang*, **N. Loka***, D. Huang*, U. Remes, S. Kaski, L. Acerbi. 2025. *Amortized Probabilistic Conditioning for Optimization, Simulation and Inference* AISTATS2025.

N. Loka, M. Ibrahim, I. Couckuyt, I. Van Nieuwenhuyse, and T. Dhaene. 2024. *Cheap-Expensive Multi-Objective Bayesian Optimization for Permanent Magnet Synchronous Motor Design* Engineering with Computers Journal.

N. Loka, I. Couckuyt, F. Garbuglia, I. Van Nieuwenhuyse, D. Spina, and T. Dhaene. 2023. *Bi-objective Bayesian Optimization with Cheap and Expensive Cost Functions.* Engineering with Computers Journal.

N. Loka, M. Kavitha, and T. Kurita. 2019. *Hilbert Vector Convolutional Neural Network : 2D Neural Network on 1D Data.* ICANN2019.

* Equal contribution

Academic Services

Reviewer for UAI (2024, 2025), NeurIPS BDU Workshop (2024), ICANN (2020), and journal reviewer for Information Sciences (2023).

Software

Berkeley, J., Moss, H. B., Artemev, A., Pascual-Diaz, S., Granta, U., Stojic, H., Couckuyt, I., Qing, J., **Loka, N.**, & Picheny, V. 2023. *Trieste: Efficiently Exploring The Depths of Black-box Functions with TensorFlow.* (Github link)

Loka, N. 2023. *Bayesian Optimization on DASH: Ask tell interface for Adhesive Bonding Optimization Problem* (Gitlab link)

Skills

Programming Language	Python, C#, Java
Libraries	PyTorch, Tensorflow, Trieste (contributor), Plotly Dash, OpenCV
Other	LaTeX, Git

Courses and Certification

Gaussian Process and Uncertainty Quantification Summer School
The University of Sheffield. Sheffield, United Kingdom. *2022*

Nordic Probabilistic AI Summer School
Norwegian University of Science and Technology. Virtual. *2021*

Deep Bayes 2019, Summer school on Deep Learning and Bayesian Methods
National Research University Higher School of Economics. Moscow, Russia. *2019*

Selected Talks

Introduction to Machine Learning Online-Indonesia
Urban Analytics Class, Bandung Institute of Technology *2024*

Introduction to Bayesian Optimization Online-Indonesia
ICATAM FTMM Universitas Airlangga *2022*