

FITRIA WULANDARI

PhD Researcher in Genetic Programming and Symbolic Regression, Generative AI, Machine Learning, Regression, Interpretability Model, Explainability Model, Evolutionary Computation & Optimization

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RESEARCH INTEREST

Machine Learning, Deep Learning, Optimization, Evolutionary Computation, Generative AI, Algorithms Generation/Customization, Synthetic Data and Interpretable Modeling

EXPERIENCE

PhD Researcher

University of Galway | Science Foundation Ireland Centre for Research Training in Artificial Intelligence (SFI CRT-AI)

October 2021 – Ongoing Galway, Ireland

- This role demanded a strong grasp of Genetic Programming, Symbolic Regression, data synthetic techniques, data augmentation techniques, knowledge distillation, regression for the interpolation and extrapolation methodologies. My contributions led to a deeper understanding of improving model performance and interpretability in challenging data scenarios and provided valuable insights into the effectiveness of the proposed techniques compared to existing methods. (Paper Accepted on LOD Conference 2023: [link](#))

Research Assistant

Kyungpook National University | Evolutionary Computation and Intelligent Systems (ECIS) Lab

February 2018 – March 2020 Daegu, South Korea

- Green House Layout Optimization for Robot Navigation and Hierarchical Approach Based Evolutionary Algorithm For Many-Objective Optimization ([paper link](#))
- Multi-objective next release optimization problem (MONRP) for the trade-off between three objectives for the future release of a software system. The optimization framework helps to find the best features to meet customer needs and commercial profit for the software industry. ([thesis link](#) and [slides link](#))

Research Assistant

Kyungpook National University | Artificial Intelligent Robot (AIR) Lab

August 2016 – December 2017 Daegu, South Korea

- Working on the obstacle detection for the multi-cleaning robot using Arduino
- Working on the face detection for the autonomous vehicles

EDUCATION

Ph.D. Artificial Intelligence

University of Galway

Oct 2021 – Ongoing Ireland

Research: Hybrid Evolutionary and Neural Program Synthesis for Artificial Intelligence

M.Sc. Electronics Engineering

Kyungpook National University | GPA 3.88/4.30

Feb 2018 – Feb 2020 South Korea

Thesis: Evolutionary Multi/Many-objective Approaches for Next Release Optimization Problem

B.Sc. Informatics Engineering

University Harapan Medan | GPA 3.49/4.00

Sep 2010 – Jul 2014 Indonesia

Project: Development of a Web-Based Project Management Platform using Waterfall Technique

TECHNICAL SKILLS

Programming and Scripting

Python, TensorFlow, PyTorch, Matlab, C++, C, PHP, SQL, JavaScript

Software and Platform

Microsoft Visio, Android Studio, Visual Studio, Eclipse, Adobe Photoshop, Adobe Illustrator, Adobe Dreamweaver, Linux, Mac, Windows, MS Word, Excel, Powerpoint, LaTeX, Github

Related Research

Single-objective and Multi-objective Optimization, Regression, Genetic Programming, Symbolic Regression, Statistical Analysis, Data Synthesis, Data Augmentation, Knowledge Distillation, Transfer Learning, Convex Hull, Principal component analysis

SYMPOSIUM / SEMINAR

"Multi-agent Systems to Maximize Thermal Comfort and Minimize Energy Consumption" Presented in Joint Workshop on CESLeA Project, Kyungpook National University, 2018.

PUBLICATIONS

Journal Articles

- A. Fajar, R. Trialih, and **F. W. Ramlan**, "A decentralized file storage for effective e-government," *Indonesia Post-Pandemic Outlook: Environment and Technology Role for Indonesia Development*, p. 279, 2022.
 - D. D. Uyeh, **F. W. Ramlan**, R. Mallipeddi, et al., "Evolutionary greenhouse layout optimization for rapid and safe robot navigation," *IEEE Access*, vol. 7, pp. 88 472–88 480, 2019.
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Conference Proceedings

- **F. W. Ramlan**, V. Palakonda, and R. Mallipeddi, "Differential evolutionary (de) based interactive recoloring based on yuv based edge detection for interior design," in *2019 International Conference on Information and Communication Technology Convergence (ICTC)*, IEEE, 2019, pp. 597–601.
- **F. W. Ramlan**, V. Palakonda, Mallipedi R., "Hierarchical Approach Based Evolutionary Algorithm For Many-Objective Optimization," in *2019 International Conference on Artificial Intelligence and Soft Computing (ICAISC)*, vol.7, 2019, pp. 7-12. ([paper link](#))
- S. Ghorbanpour, V. Palakonda, **F. W. Ramlan**, R. Mallipeddi., "An Experimental Short Review On Color Image Quantization". In *2019 International Conference on Artificial Intelligence and Soft Computing (ICAISC)*, vol.7, 2019, pp. 33-38. ([paper link](#))
- **F. W. Ramlan**, and J. McDermott, 2023, September. "Genetic Programming with Synthetic Data for Interpretable Regression Modelling and Limited Data". In *International Conference on Machine Learning, Optimization, and Data Science* (pp. 142-157). Cham: Springer Nature Switzerland. ([paper link](#))

TRAINING

- Machine Learning | University of Limerick
 - Computer Vision | Dublin City University
 - Constraint Programming | University College Cork
 - Reinforcement Learning and Recommended Systems | Trinity College Dublin
 - Natural Language Programming | University of Galway
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AWARDS

- SFI CRT-AI PhD Scholarship | 2021 - Ongoing
 - National Research Foundation South Korea | 2018 - 2020
 - KNU International Scholarships | 2018 - 2020
 - Brain Korea 21 (BK21) | 2018 - 2020
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REFERENCE

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Dr. Colm O'Riordan

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