Curriculum Vitae

Family name: Kim
First name: Hyeon-Tae
Present position: Professor
Institution: Gyeongsang National University, Jinju, Korea
E-mail: bioani@gnu.ac.kr

EDUCATION

O Ph. D. Kyoto University. 2005.

    Thesis title: The basic study of the Animal Biometrics for Identification of the Cattle.
    (Advisor: Ikeda Yoshio)
    Major: Animal Biometrics Engineering
    Minors: Bio-Signal Processing Engineering for Livestock Environmental

O Ph. D. SungKyunKwan University. 2001.

    Thesis title: Measurement of Body Parameters, Estimation of Weight and Individual Recognition of the Dairy Cattle by Using Image Processing.   (Advisor: Lee, Dae-Weon)
    Major: Bio-Signal Processing Systems Engineering
    Minors: Automatics and Management for Livestock Environmental Engineering

O M.S. Gyeongsang National University. 1993.

    Thesis title: The Effect of Types of Perforated Holes in a Duct on Air Flow Patterns and Temperature Distribution in an Air-Conditioned Storage.
    (Advisor: Choi, Hong-Lim)
    Major: Agricultural Environmental Engineering
    Minors: Agricultural Engineering

RESEARCH EXPERIENCE

2010. 3 ～ present.   Professor.
Department of Bio-systems Engineering, College of Agriculture,
Gyeongsang National University, Jinju, Korea,

2003. 4 ～ 2008. 2   Researcher.
Division of Environmental Science & Technology, Graduate School of Agriculture,
Kyoto University, Kyoto, Japan,

2001. 3 ～ 2003. 3.   Senior Researcher.

The Institute of Life Science and Technology, SungKyunKwan University, Suwon, Korea,

1995. 3 ～ 1998. 2. Researcher.
Lab. of Bio-Environment for Livestock, Seoul National University, Suwon, Korea,

1993.10 ～ 1995. 3. Research student.
Department of Agricultural Engineering, University of Tokyo, Tokyo, Japan,

1991. 3 ～ 1993. 2. Graduate Research Assistant.
Department of Agricultural Engineering, Gyeongsang National University, Chinju, Korea,

RESEARCH INTERESTS

O Specific interests include:

1. Animal welfare and precision livestock farming.
2. Animal Bio-Metric
3. Automatic environment control of agricultural building using theory of artificial intelligence.
4. Environment control of animal production system and composting system.
5. A new system approach on agricultural field for human-animal translation with AI.
6. Composting as a bio-drying process for high moisture materials, and nutrient, carbon, and energy flows in agricultural ecosystems.

PUBLICATIONS OF JOURNAL

Basack J.K., E. Arulmazhi, B.E. Moon., A. Bhujel and KIM, H.T.. 2022.
"Modelling methane emissions from pig manure using statistical and machine learning methods"
Journal of Air Quality, Atmosphere & Health Vol. 15 (3)
https://doi.org/10.1007/s11869-022-01169-0

Jaihuni, M., Basak, J.K., Khan, F., Okyere, F.G., Sihalath, T., Bhujel, A., Park, J., Lee, D.H. and KIM, H.T. 2021.
"A novel recurrent neural network approach in forecasting short term solar irradiance"
ISA Transactions, https://doi.org/10.1016/j.isatra.2021.03.043.

Khan, F., Kim, N.E., Bhujel, A., Jaihuni, M., Lee, D.H. and KIM, H.T. 2021.
"Assessment of Combined Trichoderma-Enriched Biofertilizer and Nutrients Solutions on the Growth and Yield of Strawberry Plants"
Journal of Agriculture & Life Science Vol. 55 (2): 99-107.

Sihalath, T., Basak, J.K., Bhujel, A., Arulmozhi, E., Moon, B.E. and KIM, H.T. 2021.

"Pig Identification Using Deep Convolutional Neural Network Based on Different Age Range"
Journal of Biosystems Engineering Vol. 46: 182-195.

Jaihuni, M., Khan, F., Lee, D.,Basak, J.K., Bhujel, A., Moon B.E., Park, J. and <u>KIM, H.T.</u> 2021.
"Determining Spatiotemporal Distribution of Macronutrients in a Cornfield Using Remote Sensing and a Deep Learning Model"
IEEE Access Vol. 9: 30256-30266.

Arulmozhi, E., Basak, J.K., Sihalath, T., Park, J., <u>KIM, H.T.</u> and Moon, B.E. 2021.
"Machine Learning-Based Microclimate Model for Indoor Air Temperature and Relative Humidity Prediction in a Swine Building"
Animals Vol. 11: 1-24

Basak, J.K., Okyere, F. G., Arulmozhi, E., Park, J., Khan, F. and <u>KIM, H.T</u>. 2020.
"Artificial neural networks and multiple linear regression as potential methods for modelling body surface temperature of pig."
Journal of Applied Animal Research Vol. 48 (1): 207-219.

Sarker, S. Basak, J.K., Moon, B.E. and <u>KIM, H.T.</u> 2020..
"A Comparative Study of PLSR and SVM-R with Various Preprocessing Techniques for the Quantitative Determination of Soluble Solids Content of Hardy Kiwi Fruit by a Portable Vis/NIR Spectrometer"
Foods Vol. 9, 1078:1-24

Khan, F., Basak, J.K., Jaihuni, M., Lee, D.H., Lee, J.H. and <u>KIM, H.T</u>. 2020.
"Forced Aerated Poultry Compost Effects on Soil Physicochemical Properties and Lettuce Plant Growth"
Journal of Biosystems Engineering Vol. 45: 104-116.

Basak, J.K., Arulmozhi, E., Khan, F., Okyere, F. G., Park, J. Lee. D.H. and <u>KIM, H.T.</u> 2020..
"Assessment of the Influence of Environmental Variables on Pig's Body Temperature using ANN and MLR Models."
Indian Journal of Animal Research Vol. 54 (9): 1165-1170.

Arulmozhi, E., Basak, J.K., Park, J., Khan, F., Okyere, F. G., Lee, Y.J., Bhujel, A., Lee, D.H., Sihalath, T. and <u>KIM, H.T</u>. 2020.
"Evaluating different models used for predicting the indoor microclimatic parameters of a greenhouse"
Applied Ecology and Environmental Research Vol. 18 (2): 2141-2161.

Basak, J.K., Arulmozhi, E., Khan, F., Okyere, F. G., Park, J. and <u>KIM, H.T</u>. 2020.
"Modeling of Ambient Environment and Thermal Status Relationship of Pig's Body in a Pig Barn"
Indian Journal of Animal Research Vol. 54(8): 1049-1054.

Arulmozhi, E., Basak, J.K., Park, J., Okyere, F. G., Khan, F., Lee, Y.J., Lee, J., Lee, D.H. and <u>KIM, H.T</u>. 2020..
   "Impacts of nipple drinker position on water intake, water wastage and drinking duration of pigs"
   Turkish Journal of Veterinary and Animal Sciences Vol. 44: 562-572.

Jaihuni, M., Basak, J.K., Khan, F., Okyere, F. G., Arulmozhi, E., Bhujel, A., Lee, D. H. and Park, J. and <u>KIM, H.T</u>. 2020.
   "A Partially Amended Hybrid Bi-GRU—ARIMA Model (PAHM) for Predicting Solar Irradiance in Short and Very-Short Terms."
   Energies 2020, 13, 435.