

Eric Charles Mai

List of Publications

Journal Papers (In Publication):

1. “Constructing multilayer feedforward neural networks to approximate nonlinear functions in engineering mechanics applications”, Pei, J.S., and Mai, E.C., *ASME Journal of Applied Mechanics* (JAM-06-1201)
2. “An Experimental Investigation of Applying Mica2 Motes in Pavement Condition Monitoring”, Pei, J.S., Ivey, Richard A., Lin, Hung Jr., Landrum, Aaron R., Sandburg, Colby J., Ferzli, Nadim, King, Timothy, Musharraf M. Zaman, Rafei, Hazem H., Mai, Eric C., *Journal of Intelligent Material Systems and Structures*

Journal Papers (Under Review):

1. “Mapping Some Functions and Four Arithmetic Operations to Multilayer Feedforward Neural Networks”, Pei, J.S., Mai, E.C., and Wright, J.P. *Computer Methods in Applied Mechanics and Engineering* (submitted in January 2008).

Journal Papers (In Preparation):

1. “Initialization of multilayer feedforward neural networks using prototypes in function approximation”, Pei, J.S., and Mai, E.C., *Neurocomputing*.

Conference Papers:

1. “Neural network initialization for modeling nonlinear functions in engineering mechanics”, Pei, J.S., and Mai, E.C., The 24th International Modal Analysis Conference (IMAC XXIV). St. Louis MO, January 30 – February 2, 2006.
2. “A heuristic neural network initialization scheme for modeling nonlinear functions in engineering mechanics”, Pei, J.S., and Mai, E.C., SPIE International Symposia Smart Structures & Materials/NDE. San Diego CA, February 15 – 17, 2006.
3. “Constructing multilayer feedforward neural networks to model nonlinear functions in engineering mechanics applications”, Pei, J.S., and Mai, E.C., The 15th U.S. National Congress on Theoretical and Applied Mechanics (USNCTAM). Boulder CO, June 25 – 30, 2006.
4. “Multilayer Feedforward Neural Network Initialization Methodology for Modeling Nonlinear Restoring Forces and Beyond”, Pei, J.S., Mai, E.C., and Piyawat, K., The 4th World Conference on Structural Control and Monitoring (4WCSCM), Paper No. 306. San Diego CA, July 11 – 13, 2006. [Presenter].
5. “Constructing multilayer feedforward neural networks to approximate nonlinear functions - examples and justifications”, Pei, J.S., and Mai, E.C., IMAC-XXV: A Conference & Exposition on Structural Dynamics, Orlando, FL, February 19 – 22, 2007. [Co-Presenter].
6. “A Heuristic Neural Network Initialization Scheme for Modeling Nonlinear Restoring Forces – Continuous Development”, Pei, J.S., and Mai, E.C. SPIE International Symposia Smart Structures & Materials/NDE. San Diego CA, March 18 – 22, 2007.
7. “Monitoring pavement condition using “Smart Dust” under surge time synchronization”, Pei, J.S., Ivey, R.A., Lin, H., Landrum, A., Sandburg, C.J., King, T., Zaman, M.M., Refai,

- H.H., Mai, E.C., Oshlake, O., Heriba, A., Hurt, E., SPIE International Symposia Smart Structures & Materials/NDE. San Diego CA, March 18 – 22, 2007.
8. “Initialization of multilayer feedforward neural networks to approximate nonlinear functions in engineering mechanics applications”, Pei, J.S., and Mai, E.C. World Forum on Smart Materials and Smart Structures Technology (SMSST). Chongqing & Nanjing, China, May 22 – 27, 2007.
 9. “Neural network initialization with prototypes – function approximation in engineering mechanics applications”, Pei, J.S., Mai, E.C., Wright, J. P., and Smyth, A.W., International Joint Conference on Neural Networks (IJCNN). Orlando FL, August 12 – 17, 2007.
 10. “Mapping elementary functions and a numerical method to neural networks”, Wright, J.P., Pei, J.S., and Mai, E.C., The 26th International Modal Analysis Conference (IMAC XXVI). Orlando FL, February 4 – 7, 2008.
 11. “Design and testing of small timber models to demonstrate nonlinear dynamics”, Mai, E.C., Sugeng, Y.P., Pei, J.S., Piyawat, K., Zimmermann, S.M., Borchard, C.V., and Li, Y., The 26th International Modal Analysis Conference (IMAC XXVI). Orlando FL, February 4 – 7, 2008.

Musical Compositions:

1. The Neighborhood. “The Beginnings and Endings EP”. Norman: Self-released, 2005.
2. The Neighborhood. “Our Voices Choked With Fireworks”. Norman: Crystal Lake, 2007.
3. Hundredsomethings. “Getwell”. Norman: Self-released, 2008.