BIO – Dr. Leila Anne Breene

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Personal Objectives

Dr. Breene has followed the progress of Artificial Intelligence since introduced to it at MIT. Having taken Andrew Ng's Stanford University Machine Learning Course and researching the area as well, Breene published a White Paper for CABA (Continental Automated Building Association). ArcoLogix has undertaken research and projects in these areas. At ArcoLogix, the CIO has assumed a manager role in the upgrade of a system responsible for both gathering, aggregating, and analyzing IoT and sensor data. We are involved with automated lighting for both parks and buildings. We are applying modeling-software techniques to communicate time variant designs.

Personal Experience

ArcoLogix, West Chester, PA – **Chief Information Officer, Co-founder** (2014 to present)

- Focus on embedded systems, artificial intelligence, data analysis and visualization.
- Architectural lighting and 3D modeling.
- **GridPlex's** and **LyteSense's** IT partner for collaboration, system design and project management in embedded systems.
- Working with a startup group on a framework which includes concepts from my dissertation and several papers.
- Member of **CABA** since 2017.

Shell Trading (US) Company, Houston TX – **Developer**, **Team lead**, **Senior Business Analyst (**1998 to 2014)

- Business Analyst and Subject Matter Expert (SME) in product trading and scheduling.
- Training and mentoring Business Analysts and Help Desk folks. Served in on-floor Risk support for first Risk system.
- Led team responsible for maintaining and enhancing contract capture, scheduling and inventory system for refined products in the US. Began as a Smalltalk developer on that system.

Compaq Computer Corporation, Houston, TX - **Systems Engineer** (1996 to 1998)

- Redesigned and coded factory floor sound testing system from C to C++.
- Conference paper and presentation on methodology to transform legacy code to object-oriented code.

Academic Experience

- Research Associate and Senior Lecturer in Computer Science at **Texas A&M** (1991-1994)
- Assistant Professor at **SUNY Plattsburgh** (1988-1991)
- Assistant Professor at **University of Vermont** (1981-1982)

Education

- **Wellesley College** (1967-71) – Exchange program at **Massachusetts Institute of Technology** (1968-69) and **Dartmouth College** (1969-1970); Completed **B.S.** in **Computer Science**, **University of Dayton**, Dayton, OH (1972).
- **M.S.** (1978), **Ph.D.** (1982) in **Theoretical Computer and Information Science, Ohio State University,** Columbus, OH.

Professional Affiliations/Certifications/Awards

- **Phi Kappa Phi Honorary Society** – Ohio State University 1980**.**
- **Institute of Electrical & Electronic Engineers (IEEE) –** Member since 1978.
- **Association for the Advancement of Artificial Intelligence (AAAI) –** Member since 2014**.**

Publications

- L.A. Breene and L. Silverman, "Artificial Intelligence and the IoT Connected Home," *CABA White Paper*, April 2018, at: http://www.caba.org/CABA/Research/White_Papers/FastForms/WHITEPAPER/CABA_WHITEPAPER_NOLOGIN.aspx?ID=2
- L.A. Breene, "Quadtrees and Hypercubes: Grid Embedding Strategies based on Spatial Data Structure Addressing," ***The Computer Journal***, June 1993.
- L. A. Breene and J. Bryant, "Image Warping by Scanline Operations," ***Computers & Graphics***, 17(2), March 1993.
- L. A. Breene, J. Creem and J. R. Neely, "Toward a Microprogramming Language for Precise Specification of Bus Automata Algorithms," presented at the *Permian Basin Supercomputing Conference*, Odessa, TX, March 1992, Texas A&M University Computer Science Department **Tech**. **Report**, #TAMU 92-004, 1992.
- L. M. Mullin and L. A. Breene, "The Formal Design, Derivation, and Software Engineering of a Parallel LU-Decomposition," Entrant in the **1990 IBM Supercomputing Competition**, (CIN 90-0129-I), 1990.
- L. A. Breene, *Parallel Recognition of Conics by Bus Automata*, **Ph**. **D**. **Dissertation**, Ohio State University, 1982.
- J. Rothstein and L.A. Breene, "Parallel Recognition of Parabolic and Conic Patterns by Bus Automata," ***Proceedings 1979 International Conference on Parallel Processing***, pp. 288-297, 1979.