ADAM R. NOLAN
Principal Engineer/Scientist

EDUCATION

- PhD, Computer Engineering, University of Cincinnati, 1996
- MS, Electrical Engineering, University of Cincinnati, 1992
- BS, Physics, Miami University, 1989

SECURITY CLEARANCE

Top Secret/SCI

EXPERIENCE RELEVANT TO THE FY11 IOTS INCREMENT 8 DEVELOPMENT EFFORT

- Over 20 years of experience in development of optimized and distributed code for image and signal processing applications
- Developed distributed computing plugins for Etegent's DSPdeveloper product, including profiling databases of resource consumption and heuristic scheduling algorithms
- Developed optimized routines for Analog Devices DSP, including a test harness for comparing theoretical results to those obtained from optimized fixed-point processing
- Developed polynomial time scheduling techniques for low level vision algorithms on networks of heterogeneous machines. This included addressing the effects of non-determinism of the underlying computational and communication resources.

PROFESSIONAL WORK EXPERIENCE SUMMARY

Etegent Technologies Ltd / Sheet Dynamics, Ltd. April 03 - Present
Chief Technology Officer

Responsible for overall direction of company's technology development, in addition to directly heading numerous research projects. His current activities include:

- Radar Performance Modeling – Developing techniques to statistically estimate the performance of radar systems and algorithms

Senior Research Scientist

Primary responsibility for heading numerous research projects. His activities included:

- Pattern Recognition – Designing algorithms and data acquisition systems for detection of misfires in diesel engines. This technique utilizes a system model to map observed flywheel torsional variations onto candidate combustion pressures.

Structural Computing, LLC, December 2004 – May 2007
Chief Engineer

Heading numerous research projects. This work included:

- RCS signature analysis and simulation - Developed metrics used in validation of synthetically generated radar range profiles. These metrics improve modeling effort by providing timely feedback on quality of synthetic data.

LexisNexis, April 2000 – April 2003
Senior Software Engineer

Lead developer on software projects. This work included:

- Portal Development - Architected the LexisNexis Portal Integration effort. Founding member of the OASIS web service for remote portal specification. Developed classification algorithms for document taxonomies.
- Websphere - Developed toolsets and processes facilitating the migration of LexisNexis document delivery systems to Java/XML via J2EE.

DEMACO-SAIC, June 1996 – April 2000
Senior Scientist

Lead developer on radar research projects. This work included:

- RCS signature analysis and simulation - Developed statistical target ID algorithms using both synthetically generated and measured radar range profiles. Designed and implemented optimal ray trace representation for Xpatch, an EM simulation suite.

UC Artificial Intelligence and Computer Vision Lab, 1990 – 1996
Research Assistant

Member of AI research team. This work included:

- EO/IR signature classification - Designed image classification algorithms under contract with General Electric Aircraft. Developed FLIR target identification algorithms using hierarchical neural networks under contract with Wright Laboratory. Designed and implemented optimized parallel image classification algorithms for inspection of aerospace components for NASA.

RELEVANT PUBLICATIONS

- Synthetic Signature Analysis via Ray Trace Decomposition, A. Nolan, J. Hughes, SPIE, Orlando FLA, April 1999.
- Combining Measured Radar Signatures With Computer-Generated Signature for Aircraft Identification, J. Leonard, B. Denney, A. Nolan, G. Lai, R.J.P. deFigueiredo, ATRWG, Huntsville AL, October 1997.
- Effects of Nondeterminism on the Predicted Speedup of Scheduling Low Level Computer Vision Algorithms on Networks of Heterogeneous Machines, A. Nolan, B. Everding, 5th International Conference on Parallel Computing, Ghent Belgium, September 1995.
- Polynomial Time Scheduling of Low Level Vision Algorithms on Networks of Heterogeneous Machines, International Conference on Parallel Processing, A. Nolan, B. Everding, W. G. Wee, Stockholm Sweden, August 1995.
- Automatic FLIR Target Recognition Using a Hierarchical Neural System, A. Nolan, W. G. Wee, J. Leonard, Proceedings of Architecture, Hardware, and Forward-looking Infrared Issues in Automatic Target Recognition, Orlando, April 1993.