Dean Knudson

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**Education**

               Ph.D., Computer Science, Northwestern University, Evanston, IL 1972

(A Method for Converting Natural Language Questions into Deep Structures)

               M.A., Mathematics, Bowling Green State University, Bowling Green, OH, 1965

               B.A., Mathematics, Concordia College, Moorhead, MN, 1963

**Experience**

2004 - present

Associate Professor – Capstone Coordinator

North Dakota State University – Fargo, ND

During the past five academic years we have had over 60 projects that were staffed by approximately 250 seniors and graduate students. These projects were all externally sponsored by companies such as Microsoft, Phoenix International, IBM, ATK, Cargill, 3M, Thomson Reuters, Forum Communications, Infinity Windows, Sundog, Mind Tremors, Honeywell, Polaris, CNSE, Rockwell Collins, West Corp. and Noridian.

1999 – 2004

Development Manager/Project Manager

Microsoft Business Solutions - Fargo, ND

My responsibilities included managing a team of software developers in the research phase of an architectural restructuring project.

1993 – 1999

Section Manager – Software Engineering Department

Northrop Grumman Corp. - Rolling Meadows, IL

My responsibilities included managing four groups (~80 engineers) dealing with the following: Support Tools, Lab Support, Database Generation Systems, IR&D Prototyping (IR Jammer, RF Jammer, Neural Nets for Tracking, Data Fusion, and Genetic Algorithms), Simulation Systems, and Automated Test Equipment Software.  These areas include real-time embedded software, real-time lab support software, and non-real-time support software.  I also coordinated the sale of software to commercial companies, set up cooperative education programs with local universities, wrote proposals for new contracts, and managed company-funded research programs with various universities.

1986 – 1993

Section Chief – Systems Architecture and Engineering Group

Systems and Research Center (SRC), Honeywell Inc. - Minneapolis, MN

My team covered a wide range of technologies including distributed computing, architecture design and analysis, instrumentation of parallel processing systems, real-time Ada, and distributed Ada with an emphasis on embedded real-time systems. My team competed for and won research projects with DARPA, Rome Labs, Wright Patterson, NASA, NRL and CECOM among others

1982 – 1986

Director of Engineering

CPT Corp. - Eden Prairie, MN

I was responsible for all software development at CPT, a $250 million company.  This included all commercially sold software as well as development and support software and hardware.  My department (~80 people) played a major role in changing CPT from a stand-alone word-processing company to one selling office automation systems.   In addition, I started an engineering group in Ireland in order to take advantage of tax incentives and low salaries in Ireland as well as to better service European OEM contracts.  During the year that this group was being expanded, I spent several months in Ireland coordinating the project with CPT/U.S. headquarters. While at CPT, I also worked closely with Sales and Marketing.  I also was given special assignments such as visiting companies that CPT was considering purchasing in order to evaluate them from a technical standpoint.

1978 – 1982

Assistant Technical Director

ITT – Advanced Technology Center - Shelton, CT

I had a significant role in establishing the basis of a new digital switching system, which eventually became a $1 billion program for ITT and is now a switching system used in Europe and other countries (the 1240E).  It is based on a distributed architecture with several hundred processors, and it had to be developed in a very short timeframe with work being distributed across several countries.  My department consisted of 65-70 people with advanced degrees and the areas of responsibility at various times included the following: Operating System, Distributed Data Base Control System, Man-Machine Communications, Call Processing, and System Integration.

1965 – 1978

Member of Technical Staff

Bell Laboratories - Naperville, IL

My work included feature development for electronic switching systems (#1 ESS) including the following: call processing, service observation, Centrex features, traffic features, and a special-purpose network management system for private networks.  I also worked on defining services to be offered in the future.

**Professional Memberships**

ACM – Association for Computing Machinery, 1978 - present

**Recent Papers/Talks**

Keynote speaker, “Tales from 40 Years in the Software Industry Trenches”, joint talk to the following conferences: *International Conference on Artificial Intelligence and Pattern Recognition (AIPR-07), International Conference on Enterprise Information Systems and Web Technologies (EISWT-07), International Conference on High Performance Computing Networking and Communication Systems (HPCNCS-07), International Conference on Software Engineering Theory and Practice (SETP-07)*, July 9-12, 2007.

Dean Knudson, Alan Braaten, Kenneth Magel, Kendall Nygard, “Software Engineering in Computer Science Capstone Projects”, *2007 International Conference on Software Engineering Theory and Practice*, Orlando, FL, July 9-12, 2007.

Dean Knudson, Kenneth Magel, “Comments on the Use of TWiki, Blackboard Portfolios and Trac to Share Proprietary Information in Student Projects”, *SITE 2008 – Society for Information Technology & Teacher Education International Conference*, Las Vegas, NV, March 3-7, 2008.

Dean Knudson, Alan Braaten, “Industry/University Cooperation in Defining Software Processes for use in Real-world Computer Science Capstone Team Projects”, *SEPG 09 North America*, a Software Engineering Institute sponsored conference, San Jose, CA, March 23-26, 2009.