Stephen Cannon

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21772 Canopy Terrace
Sterling, VA 20164
(571) 218-7077

Summary

A research or software design & development position in the field of artificial intelligence.

Clearances

Furnished upon request

US Citizen

Experience

Shared Spectrum Company Vienna, VA July, 2010 – Present
Software Engineer
Responsible for designing, developing, and testing approaches for managing and controlling wireless network systems.
Semantic Networks – Designed, developed, and tested semantic networks that represented the domain knowledge pertinent to wireless network systems. Also assisted in the development of software tools that facilitate the development and use of these semantic networks and helped build a simple semantic reasoner to process these semantic networks.
Probabilistic Relational Modeling – In the process of developing an expert system that builds upon an existing semantic reasoning suite of tools. This expert system will utilize the PR-OWL standard for representing probabilistic ontologies and is capable of making resource allocation decisions on problems that include uncertainty. Development follows an extensive design stage and will be followed by an equally extensive testing and validation stage.

Global InfoTek, Inc. Reston, VA April, 2008 – July, 2010
Software Engineer II
General Java software developer.
Data Warehousing – Developed the transform component of a custom ETL system. Continued to work with this software system from initial stages of requirements gathering, through system design, implementation, testing, and maintenance.

OnLine Star, Inc. Bowie, MD July, 2007 – April, 2008
Associate Engineer II
In July of 2007, the research core of IET, Inc. below became OLS, Inc.
Game Theory – Helped develop a decision network system capable of handling multiple agents.

Information Extraction & Transport, Inc. Rosslyn, VA September, 2004 – July, 2007
Software Engineer II
Developed dynamic Bayesian networks and tools to utilize dynamic Bayesian network for expert systems.
Knowledge Representation – Modeled knowledge using Bayesian networks, semantic networks, and probabilistic relational models.
Probabilistic Relational Modeling – Developed probabilistic relational models through the stages of design, modeling, and validation/verification. Helped develop an extension to the Web Ontology Language (OWL) that supports the representation of probabilistic relational models.
Intelligent Agents – Developed intelligent agents as part of an automated sensor swarming system.
Image Analysis – Designed a prototype Bayesian network that would identify buildings from images.
Synthetic Data Generation – Designed case based system to simulate terrorist social networks for testing purposes.

MIT Lincoln Laboratory Lexington, MA June – August, 2003
Summer Research Student
Assisted in refining object classification algorithms for ballistic missile defense. Developed a testing methodology for evaluating Bayesian network inference algorithms.

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Education

George Mason University Fairfax, VA September, 2002 – December, 2007
M.S. in Systems Engineering, GPA 3.27
Artificial Intelligence – Knowledge of modern artificial intelligence techniques with a specialization in probabilistic relational models.
Thesis Research – Studied the relationship between the structure of partially dynamic Bayesian networks and the performance of the Boyen-Koller, particle filtering, and symbolic probabilistic inference algorithms. Developed a random partially dynamic Bayesian network generator for use in this research study. Conducted extensive data analysis.

George Mason University Fairfax, VA September, 1997 – May, 2002
B.S. in Systems Engineering, GPA 3.32
Led a team of students in George Mason's Systems Engineering senior design class.

Skills

Computer Languages:	Over 5 years experience with C/C++, Java, and Common Lisp Familiarity with Python, Perl, PASCAL, FORTRAN
Software & Standards:	Over 5 years experience with Quiddity, Netica, Unix/Linux, Windows, UML Familiarity with GWT, Jade, Matlab, MySQL DB, OWL, SWRL, Protégé, XML, DOS
Artificial Intelligence:	Over 5 years experience with Bayesian networks, Semantic networks, Dynamic Bayesian Networks, Particle Filtering, Symbolic Probabilistic Inference Familiarity with Neural Networks, Evolutionary Computation

Publications

Mike Pool, Francis Fung, Stephen Cannon, Jeffrey Aikin, "Is It Worth a Hoot? Qualms about OWL for Uncertainty Reasoning," *W3: Uncertainty Reasoning for the Semantic Web*, 2005

Charles Twardy, Edward Wright, Stephen Cannon, Masami Takikawa, "Credibility Models," *UAI Applications Workshop 2007*, 2007

Robert C. Schrag, Jon Pastor, Chris Long, Eric Peterson, Mark Cornwell, Lance A. Forbes, Stephen Cannon, "Contributions to a Semantically Based Intelligence Analysis Enterprise Workflow System," *OIC 2009 Proceedings at CEUR*, 2009