Sang-Joon Lee

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Education

MASTER OF SCIENCE, COMPUTER SCIENCE | BOSTON UNIVERSITY | SEPT 2015 – JAN 2017

- Related coursework: Artificial Intelligence, Image and Video Computing, Distributed Systems, Databases, Algorithms

BACHELOR OF APPLIED SCIENCE, COMPUTER ENGINEERING | UNIVERSITY OF TORONTO | SEPT 2000 – MAY 2005

- Related coursework: Software Engineering, Operating Systems, Computer Architecture, Digital Signal Processing

MASTER OF SCIENCE, COMPUTER ENGINEERING | RYERSON UNIVERSITY | SEPT 2007

- Related coursework: Wireless Communication, Human Computer Interface, Optimization

Work Experience

SENIOR SOFTWARE ENGINEER | CORINDUS VASCULAR ROBOTICS | WALTHAM, MA |APR 2017 – PRESENT

- Led research and development of vascular robotics software development – automated movements.
- Languages: C#, C, C++, MATLAB
- Tools: Visual Studio, Enterprise Architect, Mercurial, LabVIEW, CAN

SOFTWARE ENGINEER (INTERN) | PHILIPS RESEARCH NORTH AMERICA | CAMBRIDGE, MA |JUN 2016 – DEC 2016

- Led research and development of a prototype augmented reality software for integration with Philips Lighting technology.
- Led investigation of integrating Facebook PrestoDB with MySQL, Hadoop Hive, MongoDB, Postgres and Cassandra.
- Languages: C++, Objective-C, C#
- Tools: iOS, Xcode, OpenCV, Unity3D, Vuforia SDK, AWS, PrestoDB, Estimote Bluetooth(BLE)

SENIOR APPLICATIONS ENGINEER | MATHWORKS | NATICK, MA | FEB 2012 – JAN 2015

- Technical focal point for major customers as an expert in Model-Based Design development using MATLAB & Simulink products, such as control system development, physical modelling, and code-generation for embedded systems.
- Responsible for debugging, investigating and resolving technical issues from major customers in Aerospace, Automotive, Medical, Energy, and Controls industries – who are using MathWorks products to develop advanced control & systems.
- Technical Projects: Embedded Technology Robotic Competition (ET Robocon) – led a team of 15 engineers to design and develop two-wheel balancing robot for autonomous navigation. Led for 3 years.
- Languages: C/C++, Java, MATLAB
- Tools: Visual Studio, MATLAB, Simulink, Perforce, Git

SENIOR SOFTWARE & SYSTEMS ENGINEER | PROLUCID | TORONTO, CANADA | NOV 2010 – FEB 2012

- Member of software consulting startup with less than 10 engineers. Responsible for the complete software & hardware development life cycle process from requirement gathering & design, implementation, testing, deployment, project management and customer support.
- Led development of customized software & hardware for clients including embedded control system design, FPGA, real-time signal processing for industrial real-time monitoring software and product prototyping for product commercialization.
- Languages: C/C++, SQL
- Tools: LabVIEW, NI DAQ, MySQL, Perforce

SYSTEM DESIGN ENGINEER II | HONEYWELL AEROSPACE | TORONTO, CANADA | MAY 2005 – NOV 2010

- Member of advanced technology research and development team at Honeywell Aerospace Power Systems Group. Worked in parallel with principal systems engineers and cross-functional engineering groups to design, implement, and execute system design and verification of avionic systems, and built prototypes for future product research & development.
- Led a team of 5 engineers modelling software and hardware system using MATLAB & Simulink and code generation in C for embedded systems.

- Technical Projects: System modelling for Electrical Power Distribution System for Commercial & Military Aircraft
- Languages: C/C++, MATLAB
- Tools: MATLAB, Simulink, SVN, PVCS, DOORS

SYSTEM DESIGN ENGINEER (INTERN) | HONEYWELL AEROSPACE | TORONTO, CANADA | MAY 2003 – AUG 2004

- Responsible for developing auto-code generation tool for rapid prototyping product development, resulting in $500k per year in cost savings throughout various projects.
- Languages: Ada, C, MATLAB
- Tools: MATLAB, Simulink, PVCS

Skills

- Languages: C/C++, C#, Objective-C, Python, Java, JavaScript, MATLAB, Go, HTML5, CSS, SQL, Ada
- Frameworks: Bootstrap, jQuery, Node.js, OpenCV, Tensorflow, StanfordNLP
- Database: MySQL, PostgreSQL, MongoDB, AWS, PrestoDB
- Tools: MATLAB, Simulink, LabVIEW, Visual Studio, Xcode, Unity3D, iOS, Vuforia SDK, CMake, GNU Make
- CM: Perforce, SVN, Git, PVCS, Mercurial TortoiseHg
- Requirements: DOORS, DO-178C, IEC-62304
- OS: Windows, MacOS, Linux (Ubuntu, CentOS)
- RTOS: FreeRTOS, QNX, VxWorks, Linux RT
- Network: Ethernet, TCP/IP, CAN, SPI, I2C, AFDX
- Graphics: Qt, OpenGL

Publications

- David Lazarovich and Sang-Joon Lee, “Approach for an Integrated Multi-Domain Aircraft Energy Model”, SAE International Journal of Aerospace, April 2009 vol. 1 no. 1 1053-1058.
- Ileana Rusan, Sang-Joon Lee and Anantha Koduru, “Early Validation of Power Distribution Channel Controller LRM Requirement using Rapid Prototyping Simulations”, SAE Power Systems Conference, Seattle, Washington, Nov 11-13, 2008.
- Sang-Joon Lee and Kaamran Raahemifar, “FPGA Placement and Optimization Methodology: A Survey”, IEEE CCECE’08: Symposium on Circuits, Devices and Systems, Niagara Falls Canada, May 4-7, 2008.

Patents

- Inventors: David Lazarovich, Ileana Rusan, Joe Nutaro, Sang-Joon Lee, Ted Gayowsky, Title: “Method for Active Power Management and Allocation of Functionality”, United States Patent 20100280682, Issued November 4, 2010.

Awards

- Honeywell Patent Award (March 2009)
- Honeywell Trade Secret Award (March 2009, March 2007, March 2006)

Certifications

- Design for Six Sigma Green Belt (Honeywell International Inc. – Starting May 2008)
- P.Eng (Passed Professional Engineer Exam) – Professional Engineer Ontario
- NI Certified LabVIEW Developer (CLD)