Ivar Thorson, Ph.D.

OBJECTIVE

A research- or senior-level position in software development or electrical engineering.

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EXPERIENCE

Senior Research Developer — 2014 – 2017
Whibse, Inc. & LegitScript, Inc.

Research Software Developer — 2012 – 2014
Oregon Hearing Research Center
Oregon Health & Science University

President, Founder — 2013 – PRESENT
Octopus Robotics, Inc.

Adjunct Prof. of Electrical Engineering — 2013
Portland State University, USA

Post-Doctoral Fellow — 2012
Istituto Italiano di Tecnologia, Italy

Visiting Researcher — 2010
Dept of Brain-Machine Interfaces,
Advanced Telecommunications Research Center,
Japan

Electrical Engineer — 2005
Mod Systems / A Dot Corporation, USA

SKILLS

CODE	Bash, C, C++, Clojure, Clojurescript, Common Lisp, Emacs Lisp, Git, HTML/CSS, Java, Javascript, MATLAB, Python, NoSQL (Cassandra), SQL (MySQL), and making REST-ful APIs
DEVOPS	AWS (especially EC2, S3), Cassandra, OpenShift, and So. Much. Linux.
MATH	Bayesian statistics, digital filtering and signal processing, machine learning, Markov-chain monte-carlo (MCMC), model-based control, rigid body dynamics, wavelets, and always linear algebra + differential equations.
ELEC.	Verilog, VHDL, FPGAs (Lattice), schematic capture, schematic layout, OrCAD, Eagle, SMT rework, brushless DC motor driver design, motor control power electronics design, inductive sensor design
MECH.	Solidworks, ProEngineer, Machining, G-code, CNC programming, CNC conversions, manual lathe, manual mill, fiber-reinforced polymers (FRP) and monocoque composite construction techniques
LANG.	English (Native Speaker), Japanese (JLPT Lvl. 1), Italian

EDUCATION

2009 – 2011	**Ph.D. Advanced Robotics**	*Istituto Italiano di Tecnologia*
2005 – 2008	**M.S. Mechatronics**	*Nagoya University, Japan*
2000 – 2004	**B.S. Electrical Engineering**	*University of Washington, USA*

PATENTS

US	2013/0074,635: Elastic Rotary Actuator
ITALY	#TO2011A000848: Attuatore Rotante Elastico con Meccanismo Ipocicloida

SCHOLARSHIPS

2005-2008 Full-ride MEXT Japanese government scholarship for research students.

REPRESENTATIVE PUBLICATIONS

THORSON, I. LIENARD, J. DAVID, S. The Essential Complexity of Auditory Receptive Fields. *PLOS Computational Biology, 2015.*

THORSON, I. A Hopping Monopod Robot Incorporating Nonlinear Series Elastic Actuators, Fiber-Reinforced Polymer Construction, and a Concurrent Asynchronous Dataflow-based Centroidal Momentum Balance Controller. *Ph.D. Thesis, Istituto Italiano di Tecnologia. 2012.*

THORSON, I. CALDWELL, D. A Nonlinear Series Elastic Actuator for Highly Dynamic Motions. *IEEE International Conference on Robotics and Automation, San Francisco, USA. 2011.*