Ivar Thorson

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Objective

A position in software development, preferably with a focus on machine learning, algorithm design, or data science.

Experience

President, Founder 2013 – Present
Octopus Robotics, Inc.

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

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

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

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.

Skills

Code From A-Z: Bash, C, C++, Clojure, Clojurescript, Common Lisp, Emacs Lisp, Git, HTML/CSS, Java, Javascript, MATLAB, Perl, Python, NoSQL (Cassandra), SQL (MySQL), REST-ful APIs, various assembly languages and buildscripts

Systems Linux systems, GNU toolchain, Eclipse, Emacs, JVM ecosystems, AWS (especially EC2, S3), Cassandra, OpenShift, and map-reduce on various clusters

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. EDAs (Cadence, ISE/Vivado, OrCAD, Eagle), HDLs (Verilog, VHDL), FPGAs (Lattice, Xilinx), SMT rework, BLDC motor 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

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.*