

CURRICULUM VITAE

MASATARO ASAI

Doctoral Student

Department of General Systems Studies

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MAIN RESEARCH INTEREST

Domain-independent search/planning/reasoning technique. Marrying deep learning to classical AI.

EDUCATION

04/2013–03/2018 (expected) *Ph.D student, M.A.* (received on 03/2015). Artificial Intelligence, Heuristic Search, Planning, Scheduling, Optimization. Masters Thesis: *Automated Cyclic Planning for Large Scale Planning Problems*; Advisor: A. Fukunaga

04/2009–03/2013 B.Eng in Traffic Simulation. Multi-Agent Model, Spatial Search. Thesis: *Distributed Cooperative Agents in Microscopic Traffic Simulation using St-RRT*; Advisor: S. Yoshimura. H. Fujii.

RECENT PUBLICATIONS & PRESENTATIONS

- [1] Masataro Asai and Alex Fukunaga. Tie-Breaking Strategies for Cost-Optimal Best First Search. In **J. Artif. Intell. Res.(JAIR)**, In press.
- [2] Masataro Asai and Alex Fukunaga. (Student Abstract) Improving Greedy Best-First Search by Removing Unintended Search Bias. In **Student Abstracts, AAAI Conference on Artificial Intelligence**, California, USA, February 2017.
- [3] Masataro Asai and Alex Fukunaga. Tiebreaking Strategies for A^* Search: How to Explore the Final Frontier? In **Proc. AAAI Conference on Artificial Intelligence (accept ratio 26%)**, Arizona, USA, February 2016.
- [4] Masataro Asai and Alex Fukunaga. Solving Large-Scale Planning Problems by Decomposition and Macro Generation. In **Proc. International Conference of Automated Planning and Scheduling(ICAPS) (accept ratio 33%)**, Jerusalem, Israel, June 2015.
- [5] Masataro Asai and Alex Fukunaga. Fully Automated Cyclic Planning for Large-Scale Manufacturing Domains. In **Proc. International Conference of Automated Planning and Scheduling(ICAPS) (accept ratio 33%)**, Portsmouth, NH, June 2014.
- [6] Shoma Endo, Masataro Asai, and Alex Fukunaga. Evaluation of a Simple, Window-based, Replanning Approach to Plan Optimization. In **Proc. ICAPS Workshop on Heuristics and Search for Domain-independent Planning (HSDIP)**, London, UK, June 2016.
- [7] Masataro Asai and Alex Fukunaga. Applying Problem Decomposition to Extremely Large Planning Domains. In **Proc. ICAPS Workshop on Knowledge Engineering for Planning and Scheduling(KEPS)**, Portsmouth, NH, June 2014.

AWARDS

Research Fellow (DC2), Japan Society for the Promotion of Science (Highly competitive scholarship/award with stipends and individual research budget of 10000 USD/year)(Apr. 2016-)

WORK EXPERIENCE

08/2016–11/2016 Research Internship at IBM Research Ireland. Project name: Robust Activity Planning and Scheduling with Multi-Modal Travel. Developed an efficient algorithm for multi-worker routing.

03/2014–09/2014 Internship at LogicVein.inc, a developer of a Configuration Management System for network devices. Worked on a technical product manual (>200 pages long) and its HTML5 conversion.

12/2011–09/2012 Internship at Metamoji.inc. Prototyped a drawing-chat system for iPad. Both the server/client sides are written in Javascript with Node.js and Titanium Mobile.

TECHNICAL SKILL

Programming Paradigm: Object-Oriented programming, Functional programming, Logic / Rule-based programming, Metaprogramming, low-level optimization, Domain Specific Language(DSL) development, compile-time optimization.

Development: Git, GitHub Flow, Test-Driven Development and Continuous Integration (Travis-CI / CircleCI).

Languages: (Professional) Common Lisp, C++, Bash, Javascript / Coffeescript, C, (Intermediate) Java, Python, (Elementary) Ruby

Frameworks: TensorFlow, Cloud services (Amazon AWS, Torque/PBS, OpenLava, cfncluster), Node.js

LANGUAGE ABILITY

English: TOEFL 105/120 (Reading:29/30, Listening:29/30, Speaking:22/30, Writing:25/30, Dec 2014).

COMMUNITY SERVICES / OTHER ACTIVITIES

(present) Open source activities on Github.

(2016–) AAAI Student Member. Reviewer for ICAPS (2016), AAAI (2015).

(2015) eazy-opengl : Common Lisp interface to OpenCL 2.0 (GPGPU language similar to CUDA).

(2015) Contributor of POCL, a vendor-agnostic Portable OpenCL implementation in C and C++.

(2015) trivia, trivia.balland2006 : An extensible and fast pattern matching compiler in Common Lisp.

(2012) Macascript : a homoiconic language that compiles into javascript.

(2013–present) Compute cluster maintenance and management (80 cores) with NFS/NIS/Torque-PBS. Live monitoring/power consumption management. Secure VPN network over the campus.

(2011–2012) Mechanical engineering under project professor Kohei Kusaka (former World Rally Championship co-driver): Full engine modification & rebuilding of 1.8 liter Mazda BP engine, fuel map / ignition timing optimization, map visualization and variable resonance intake system (Arduino).

(2011) Certification in “basic course on machining technique” by Prof. Ryu Chikayama.