Computational Approaches to Representation Change during Learning and Development

Papers from the AAAI Fall Symposium

Clayton T. Morrison and Tim Oates, Cochairs

Technical Report FS-07-03

AAAI Press
Menlo Park, California
## Contents

Children's Rational Exploration / 1  
*Elizabeth Baraff Bonawitz, Laura Schulz*

Handling Representation Changes by Autistic Reasoning / 9  
*Boris Galitsky*

Representing Systems with Hidden State / 17  
*Christopher Hundt, Prakash Panagaden, Joelle Pineau, Doina Precup*

Representation Discovery in Planning using Harmonic Analysis / 24  
*Jeff Johns, Sarah Osentsoski, Sridhar Mahadevan*

Handling Granularity Differences in Knowledge Integration / 32  
*Doo Soon Kim, Bruce Porter*

Autonomous Robot Learning of Foundational Representations / 39  
*Benjamin Kuipers*

Changing Semantic Role Representations  
with Holographic Memory / 40  
*Simon D. Levy*

Exploring Massive Learning via a Prediction System / 46  
*Omid Madani*

Prediction Games in Infinitely Rich Worlds / 54  
*Omid Madani*

Representation Change in the Marchitecture / 56  
*Marc Pickett I, Don Miner*

Automatic Development from Pixel-level Representation  
to Action-level Representation in Robot Navigation / 58  
*Jefferson Provost*

Computational Models for Representation Change  
in Human Learning / 60  
*Jennifer Roberts*

Representational Reformulation in Hypothesis-Driven Recognition / 62  
*Benjamin Rode, Robert C. Kahlert*

Diversity of Developmental Trajectories in Natural  
and Artificial Intelligence / 70  
*Aaron Sloman*

Representation Transfer for Reinforcement Learning / 78  
*Matthew E. Taylor, Peter Stone*
A Multiple Representation Approach to Learning Dynamical Systems / 86
Thomas J. Walsh, Michael L. Littman

Relational State-Space Feature Learning and Its Applications in Planning / 88
Jia-Hong Wu, Robert Givan