

Collin Cappelle

PERSONAL DETAILS

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EDUCATION

Ph.D. Computer Science 2015-2019

University of Vermont

Thesis: *Exploring the Modularity and Structure of Robots Evolved in Multiple Environments*.
Advised by Josh Bongard.

Complex Systems Graduate Certificate 2019

University of Vermont

B.S. Mathematics 2011-2015

University of Vermont
GPA: 3.6

B.S. Computer Science 2011-2015

University of Vermont
GPA: 3.6

POSITIONS

Research Engineer 2019-present

Navisens

Implemented SLAM for pedestrian position estimation on mobile devices. Created and maintained visualization tools used to analyze test results.

Research Assistant 2015-2019

University of Vermont

Worked with Dr. Josh Bongard in the MEC-Lab at UVM. Explored the relationship between neurology, morphology, and environment of robots in an evolutionary context. Created and maintained *pyrosim*, a python tool for simulating neurally controlled robots.

PUBLICATIONS

Journal Publications

1. C Cappelle, A Bernatskiy, K Livingston, N Livingston, J Bongard (2016)
Morphological modularity can enable the evolution of robot behavior to scale linearly with the number of environmental features.
Frontiers in Robotics and AI

Conference Proceedings

3. D Matthews, S Kriegman, C Cappelle, J Bongard (2019)
Word2Vec to behavior: morphology facilitates the grounding of language in machines.
International Conference on Intelligent Robots and Systems (IROS), Macau, CN.
2. C Cappelle, J Bongard (2018)
Embodied embeddings for Hyperneat.
Conference on Artificial Life (ALIFE), Tokyo, JP.
1. C Cappelle, A Bernatskiy, J Bongard (2017)
Reducing training environments in evolutionary robotics through ecological modularity.
Conference on Biomimetic and Biohybrid Systems pp95-106 (Living Machines), San Fransisco, CA.

Minimally Reviewed Articles

2. S Kriegman, C Cappelle, F Corucci, A Bernatskiy, N Cheney, J Bongard (2017)
Simulating the evolution of soft and rigid-body robots.
Proceedings of the Genetic and Evolutionary Computation Conference Companion (GECCO), Berlin, DE.
1. A Larson, A Bernatskiy, C Cappelle, K Livingston, N Livingston, J Long, J Schwarz, M Smith, J Bongard (2016)
Recombination hotspots promote the evolvability of modular systems.
Proceedings of the Genetic and Evolutionary Computation Conference Companion (GECCO), Denver, CO.