Alec Shkolnik

Founder and President, LiquidPiston

Greater Boston Area

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LiquidPiston, Inc.

Massachusetts Institute of Technology

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Entrepreneur, R&D technology developer / program manager, and technical specialist - knowledgeable in modeling, optimization and control of complex dynamic systems, with experience applying these methods in fields ranging from living neuronal networks to robots to internal combusti...

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Experience

Founder, CEO
LiquidPiston, Inc.
Jan 2011 – Present • 7 yrs 7 mos
Bloomfield, CT

LiquidPiston is designing a new type of combustion engine, based on an improved thermodynamic cycle. The engine may double fuel efficiency, while reducing engine size and weight by 3-4x over diesel engines.

Responsibilities at LPI are divided into technical responsibilities, including engine modeling and concept development, as well as management responsibilities, including development and execution of strategic and tactical plans, and corporate development activities.

Postdoctoral Associate
Massachusetts Institute of Technology
Feb 2010 – Jan 2011 • 1 yr

Modeling and Control of robots and living neural networks, at the Robot Locomotion Group, in the Computer Science and Artificial Intelligence Lab (CSAIL).

Research Assistant / PhD Student
MIT
Sep 2003 – Feb 2010 • 6 yrs 6 mos

Research Assistant / PhD student in the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL). Working on robot locomotion, with biological inspiration. Focus of research was on control and motion planning strategies for the DARPA funded LittleDog program. Developed fast motion planning algorithms to reduce the complexity of the planning problem to make it tractable, while also taking into account the nonlinear dynamics of the underlying robotics systems.

Visiting Research Fellow / NSF EAPSI Program

AIST

Jun 2007 – Aug 2007 • 3 mos

Tsukuba, Japan

Worked on motion planning and control algorithms for small humanoid robot, with the Humanoid Research Group at AIST

Research Assistant, BS/MS thesis

Georgia Institute of Technology

2000 – 2003 • 3 yrs

Atlanta, GA

Conducted research for MS thesis (at Emory University) in Computer science. Worked with Professor Steve Potter in the Biomedical Engineering lab at George Tech (joint with Emory).

Developed algorithms to study neurons cultured in a dish. The lab was setup to culture the neurons, and the neural culture interfaced with a computer through a multi-electrode array (MEA). The electrodes could record electrical signals and stimulate the living neural network. The research demonstrated computational properties of these living neural networks, and used the computation to control a robot. The robot provided information to the neurons, and the neurons gave "commands" to the robot, so the robot could execute a "pursue and follow" strategy.

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Education

Massachusetts Institute of Technology

PhD, Robotics / Artificial Intelligence

2003 – 2010

Emory University

B.S. and M.S., Computer Science, Behavioral Neuroscience and Biology

1999 – 2003

William H. Hall High School

High School

1995 – 1999

Skills & Endorsements

Engineering Management

Thermodynamics · 1

Chet Bacon has given an endorsement for this skill

Internal Combustion Engines

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