

Hexapod Behavior Generator: Model-Based Software Generation

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Target Audience: Everyone!

Dmitri is a hexapod robot research tool designed as a class project at the University of Arizona in Spring 2009. Each of Dmitri's legs and head mechanism has three degrees of freedom totaling 21 degrees of freedom. Various past projects have included the study of machine learning methods to get the hexapod to walk, and other class projects involved the study of optic flow computation to build three dimensional maps for terrain adaptation and obstacle avoidance. Each time a new project is conceived, the source code is copied then heavily modified for the specific application. As a research tool, Dmitri is has the capability of exploring various simple or complex behaviors. Unfortunately, it is difficult for most people to quickly implement such behaviors.

This tutorial will demonstrate how a behavior generator using MetaGME helps people of varying programming skills design a custom behavior. Rather than requiring expert programming experience, users will clearly be able to design various behaviors that can be compiled and run on Dmitri. Also, users who are experienced will be able to use the same tools to get started, as the generated output is C++ code with sufficient legible formatting to begin adjusting lower level aspects of the behavior.

About the Speaker

Matt Bunting is a PhD student at the University of Arizona. He has received numerous awards, including "Student of the Year" from EE Times in 2011. You can find out more about Matt and Dmitri on YouTube.
