Haddington Dynamics is the creator of Dexter, a high-precision, high-performance 3D-printed haptic robot powered by FPGA supercomputing technology. Dexter is designed as an open source global resource that radically bends cost curves, and empowers society to redefine how humans use and interact with robots. Dexter has a 670cm reach, 1kg payload and its sub 50µm repeatability is load independent, with a working solution for sub 20µm.

All Level Programming
Communicating with Dexter gets easier.

MIT Media Lab's Christopher Fry has been designing programming languages for decades because language is the primary user interface to humans. By being uniform and elegant with syntax and semantics, we can lower the barrier to entry for managing complexity. Dexter represents a particularly challenging environment because users must manage physically moving precision hardware, gather and interpret data from complex sensors, allocate computing resources to reprogrammable FPGA super processors, manage more conventional processors, interoperate with Unix and the intricate Robot Operating System (ROS) and its vast array of libraries.

Most programmers confronting this tangled architecture would need to be well-versed in C++, Python, BASH and lower level FPGA programming. The Dexter Development Environment facilitates control of all of this via JavaScript with some key extensions. Furthermore, we're minimizing the need to understand ROS and Dexter-specific syntax by providing menus that help generate function calls appropriate for controlling Dexter.

DDE is packaged as a Google Chrome app, which is essentially a stand-alone highly interactive website that is trivial to install on Windows, Macs and Linux computers, avoiding a large barrier to utilizing ROS. DDE contains its own documentation. It strives to make robot programming accessible to serious robot enthusiasts who aren't necessarily software wizards.
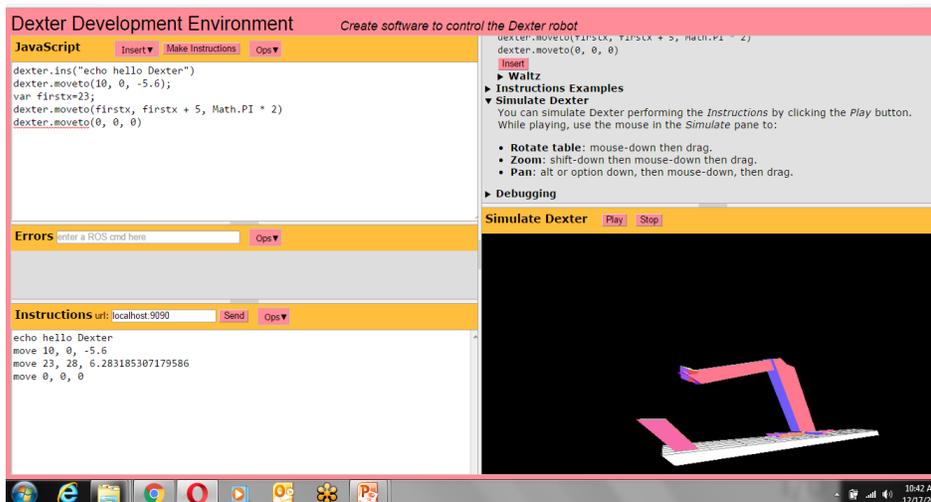
The pre-alpha version of Dexter Development Environment

DEXTER SAYS THANK YOU for signing up for our newsletter.

Videos are up!
http://hdrobotic.com/videos/

Great article on the Parallel Future from Motherboard.
http://motherboard.vice.com/read/intel-bets-167-billion-on-the-massively-parallel-future

Our Co-Founder and Inventor Kent Gilson, a leading pioneer in FPGA*, has been working in this field for 3 decades. Listed below are some of his accomplishments:

1984 First Parallel Processor

1988 First Widely used FPGA application in Laser Printing

1990 First 128 Track recording studio

1996 First Patented Microprocesser

1997 First HyperComputer (FPGA Supercomputer)

2003 First GUI FPGA programming language

2015 First FPGA 3D Printed Robot

Awarded 8 competitive government funded research contracts

*Forbes ASAP

HADDINGTON DYNAMICS

BIOMEDevice San Jose -ReCap

Suzanne Deffree, Executive Editor of EDN, invited Dexter to exhibit at the show (2 shows in one – BioMED and the Designers of Things) in early December, 2015. Suazanne liked our robot at Maker Faire and wanted to give us and opportunity to show off Dexter. Lots of thanks to her and her team.

We had the chance to meet with many different companies at the show including – Amgen, Stryker and the Snickerdoodle guys.   We also had the opportunity while we were in Silicon Valley to visit with QuantumTrace and TechFarm. We met offsite with several companies, including S&P500 and NASDAQ-100 companies. All great meetings and we look forward to continuing the dialog with all these folks.

New Control Board – Rev3 is spot on.

The board measures 16.5cm by 5.7cm, the FPGA board sits on top.

The redesigned 6 channel control board by Gary Kochis, our Director of Engineering, is in and it is running beautifully. Gary's background in optimizing boards for lower power consumption really paid off. We are running the robot at only 20W!! Dexter is now in position to run off a small solar panel.

See Gary's background http://hdrobotic.com/team/

Dexter goes back to school
Mannion Middle School –
Henderson NV December 3, 2015
John Hassinger. Coordinator of Training and Education, took Dexter to a job fair. John had the chance to tell middle schoolers what a career in robotics entails and the educations that is needed. The children asked many questions and were thrilled to see Dexter and the 3Dprinter that made its parts.

NYIT – Recap
Dexter got schooled.

The presentation at NYIT in New York City at the NYIT on Broadway auditorium, was very successful. The group gathered at the Auditorium on Broadway.   The event stirred interest and Dexter is invited back to launch a course this February.

A big thank you to Matthew Cornelius for all the coordination it took to create the event. And, thank you to the folks that attended.

We look forward to seeing you again in February, 2016.

Dexter @ RoboUniverse

RoboUniverse is the first professional buyer – seller conference and exposition dedicated to the service robotics industry. Their mission is to accelerate the adoption of modern robotics – service, collaborative, and aerial (drones) robots for business, manufacturing, logistics, healthcare, education, personal, and home-based applications.

Organized for robot buyers and end users, the conference program focuses on smart, practical, and sustainable robots and select vertical markets while addressing key industry drivers such as cognitive science and the internet of everything (IoT).

Dexter showed well at the conference which was held at the San Diego convention center in December. This was the first chance for the team to meet with potential OEM buyers and partners.   Many good relationships were formed and we look forward to building those relationships in 2016.