DIMITRI DIAKOPOULOS

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PROFILE

Strikes a balance between designer and engineer. Works well with collaborators across a variety of fields: computer vision, graphics, sensor hardware, dsp. Academic background in audio and interactive art installation. Now looking at next generation media systems: virtual reality, sensors, controllers, and spatial audio.

INDUSTRY EXPERIENCE

Perceptual Computing, Intel (2013 - Present)

- Prototype engineer within Perceptual Computing, known externally as the Intel RealSense brand.
- Strategic concept development around Intel RealSense sensor systems and their integration in new form-factors: tablets, phones, HMDs, 3D displays, and robotic platforms.
- Led implementation effort around *synthetic reality* – a family of ideas representing the integration of reconstructed real-world geometry and mobile virtual reality.
- Spearheaded prototyping and definition efforts for computational depth photography (3D snapshots, simulated lens blur, background segmentation & editing)
- Co-developer of internal 3D prototyping engine for building augmented/virtual reality experiences. Built suite of real-time scene editing tools for authoring content (3D/audio).
- Engineer and UI designer on real-time 3D scanning application for small objects and large scale rooms.
- Extensive technical involvement on prototypes shown by Intel CEO Brian Krzanich during CES 2014 & 2015, Computex 2015, and IDF 2014 & 2015.

Design Commission (2012 – 2013)

- Interactive engineer at a small digital product design and UX firm. Full-stack development on projects commissioned by local Seattle-area startups.
- Built Prototsketch, an iOS application that enhances the digitization, sharing, and review workflow of UX designers that sketch on paper using Design Commission's specialized line of paper prototyping products, UI Stencils.

Google Summer of Code (2009)

- Authored a toolkit for touch interaction on projector-based multi-touch surfaces. End result was conceptually similar to later iPad apps like TouchOSC or Jazzmutant's Lemur. Mentor: Seth Sandler

ACADEMIC

Masters of Fine Arts (MFA), California Institute of the Arts (2012)

- Thesis: *Collaborative Applications in Computational Creativity and the Arts*; a research-driven document that describes four projects completed while in residence.
- Quick Summary: A critical discourse (along with practical examples) on the evolution of building software tools now that code has emerged as a common language of collaboration among artists.
- Advisor: Dr. Ajay Kapur

Bachelors of Fine Arts (BFA), California Institute of the Arts (2011)

- Major in music and media technology with an emphasis on interaction design, multimedia signal processing, and human-robot interaction.
- Primary coursework included: physical computing, computational media, music information retrieval, interface design, mechatronics, 3D spatial audio, and digital signal processing.

TECHNICAL SKILLS

Fluent Languages

C++11, JavaScript (ES5/6), Objective-C (out of practice).

Libraries, APIs, Engines

Processing, ChucK, JUCE, oFx, Cinder, Photoshop/Illustrator, XCode, Visual Studio, Git, OpenGL 3.3 Core +, a little Unreal Engine 4.

Physical Computing

Raspberry Pi, Beaglebone Black, Arduino, 3D modeling for FDM (Makerbot) and SLA (Form1+), lasercutting, soldering, simple PCB layout with Eagle.

Web Development

MEAN Stack: Node.js, Angular.js, MongoDB; Three.js/WebGL.

SELECT PUBLICATIONS

Diakopoulos, D., Kapur, A. Netpixl: Towards a New Paradigm for Networked Application Development. In Proceedings of the Conference on New Interfaces for Musical Expression (NIME). Daejon, South Korea, June 2013.

Diakopoulos, D. 2012. Collaborative Applications in Computational Creativity and the Arts. Master's Thesis, California Institute of the Arts.

Vallis, O., Diakopoulos, D., Hochenbaum, J, Kapur, A., 2012. Building on the Foundations of Network Music: exploring interaction contexts and shared robotic instruments. Organised Sound 17(1).

Diakopoulos, D., Kapur, A. HIDUINO: A firmware for building driverless USB-MIDI devices using the Arduino microcontroller. In Proceedings of the Conference on New Interfaces for Musical Expression (NIME). Oslo, Norway, May 2011.

Diakopoulos, D., Kapur, A., Argos: An Open Source Application for Building Multi-Touch Musical Interfaces.. In Proceedings of the International Computer Music Conference (ICMC). New York, June 2010.

Diakopoulos, D., Vallis, O., Hochenbaum, J., Murphy, J., Kapur, A., 21st Century Electronica: MIR Techniques for Classification and Performance. In Proceedings of the 10th International Meeting for the Society of Information Music Retrieval (ISMIR). Kobe, Japan, October 2009.

ARTISTIC COLLABORATIONS

The Machine Orchestra in the Walt Disney Concert Hall (Los Angeles, CA, 2009)

A Balanced Conversation at [Storefront] by Olson Kundig (Seattle, WA, 2012)

REDHOT at the San Jose Tech Museum of Innovation (San Jose, CA, 2013)

REDHOT at the Portland Art Museum (Portland, OR, 2014)

Amplify Us at Minneapolis Orchestra Hall (Minneapolis, MN, 2014)

Above, Below, and In Between (Seattle Symphony, Benaroya Hall) (Seattle, WA, 2015)

APPS

SequenceApp
A unique geometric musical sequencer designed for iOS 6.0.

UI Stencil's Protosketch
A paper prototyping utility designed for iOS 7.0.

SELECT OPEN SOURCE CONTRIBUTIONS

HIDUINO
A firmware for Arduino that implements the MIDI spec of USB. It is primarily useful for prototyping physical I/O on Arduino without the trouble of implementing a custom serial protocol.

LABSOUND
Co-developer of LabSound, a cross-platform C++ audio engine. LabSound includes number of useful synthesis, analysis, and 3D spatialization features that makes it ideal for interactive audio applications and games.