FEDERICO SALDARINI

Computer Scientist | Software Engineer

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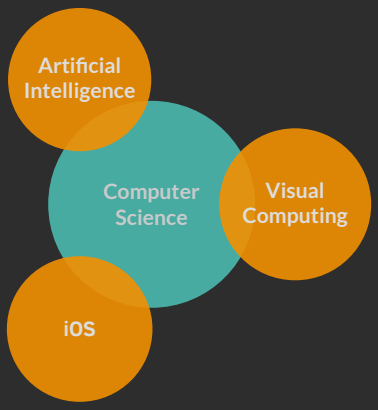
saldavonschwartz

Focus



Languages

Python • C • C++ • Obj-C • C#

Frameworks

- PyTorch • Numpy • SciPy
- Eigen • glm • xtensor
- OpenGL • OpenCV • matplotlib
- LaTeX • Jupyter • Unity
- Unreal

Publications

F. G. Saldarini,
"Waveshaping: from csound to cocoa,"
in *The Audio Programming Book*, 1st ed.,
R. Boulanger and V. Lazzarini,
Ed. Cambridge: The MIT Press,
2010, DVD Ch. 34.

rev: 2020-04-20

ABOUT

I am a computer scientist focused on **visual computing, artificial intelligence and interfacing with the physical world** and enjoy projects where these converge.

EDUCATION

2011 **B.S. Computer Science** **Portland State University. Portland, OR.**

Relevant Coursework (for credit and audited)

- Artificial Intelligence
- Machine Learning
- Computer Graphics
- Computer Vision
- Parallel Computing
- ConvNets for Visual Recognition

PROJECTS IN AI / VISUAL COMPUTING

Automatic Panoramas

Image registration based on automatic feature matching.

Deep Q-Network

An implementation of DeepMind's reinforcement learning paper, evaluated in OpenAI Gym.

Path Tracer

A GPU-accelerated path tracer.
Work-in-progress.

GPUKit

A framework for implementing reconfigurable rendering pipelines in C++ / OpenGL.

NNKit

A Python framework for implementing dynamic neural networks.

Digits

A neural network classifier implemented in Python and deployed to iOS via Obj-C++ and OpenCV.

VRTeleport

A C++ plugin for VR locomotion in Unreal Engine.

EXPERIENCE

■ 04/20 - Research Engineer
BID - Berkeley Institute of Design

Collaborating with a group of researchers from UC Berkeley's BID Lab on an authoring tool for XR environments, based on programming by demonstration.

■ 01/19 - Engine Engineer
Crystal Pier Software

Ported and extended C game from SDL 1.x to SDL 2.x. Prototyped a ECS engine in OpenGL/C++ to implement future versions of the game on.

■ 03/17 - Engine Engineer
Piper

Worked on general optimizations in a GL ES engine for Raspberry Pi.

■ 02/17 - VR Engineer / Co-Creator
RED Patterns • **[Immersion Award, 45th FNC]**

Implemented a room-scale VR experience in Unreal, including depth-captured environments and actors. Commissioned by SAT, Canada.

■ 11/16 - VR Engineer
Endless Riff

Rigged character models and optimized precomputed lighting in Unity virtual reality scenes.

■ 05/16 - VR Engineer
Boon VR

Prototyped medical training experiences integrating 360 video and interactive overlays in Unity / Unreal. Researched methods to reproject cg content onto 360 videos.

■ 02/16 - iOS + Bluetooth Engineer
Magic Instruments

Implemented a Bluetooth protocol and karaoke-style engine for iOS devices to interact with an experimental electronic guitar.

■ 08/15 - AR Engineer
Wiggle Planet

Worked on 3D transformation / projection code in a custom GL engine interfacing with Vuforia SDK in iOS.

■ 02/14 - iOS + Unity Engineer
Anki

Worked on native iOS game with robotic cars controlled by AI and humans via Bluetooth. Prototyped a system for communication between BLE stack, AI-planner and Unity.

■ 2012-2017 - iOS Engineer
(Full-Time / Consultant)
Shyp • Shopular • Live Nation • Interview Cake
Basic Space • Learnist • Nextive