

# FEDERICO SALDARINI

Computer Scientist | Software Engineer



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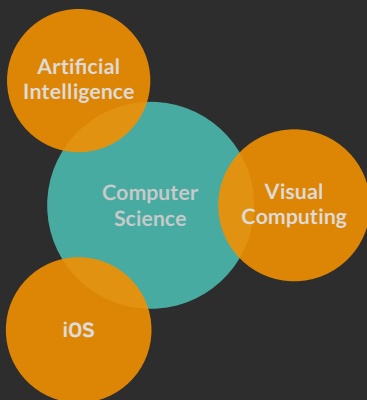


/in/federicosaldarini



saldavonschwartz

## Focus



## Languages

Python • C • C++ • Obj-C • C#

## Frameworks

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

## 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
- Computational Photography
- Parallel Computing
- ConvNets for Visual Recognition

## PUBLICATIONS

2010

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.

## PROJECTS IN AI / VISUAL COMPUTING

### 🔗 Automatic Panorama Stitcher

A pipeline for warping images via planar reprojection based on feature matching.

### 🔗 Deep Q-Network

Implementation of DeepMind's reinforcement learning algorithm and testing in OpenAI Gym.

### 🔗 GPUKit

A C++ framework for OpenGL rendering.

### 🔗 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

### ■ 01/19 - Engine Engineer

Crystal Pier Software

Ported a game from SDL 1.x to SDL 2.x. Also currently designing a modern ECS engine to re-implement the game on top of, in order to enhance both its performance and visual features.

### ■ 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 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 VR medical training experiences integrating 360 video and interactive overlays. Researched methods to reproject cg content onto video based on depth queues extracted from 360 video.

### ■ 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 game with robotic cars controlled by AI and humans via iOS devices. Prototyped a system for communication between BLE stack, AI-planner and Unity.

## OTHER EXPERIENCE: iOS, full-time & contract, 2012-2017

Shyp • Shopular • Live Nation • Interview Cake • Basic Space • Learnist • Nextive