

# FEDERICO SALDARINI

Computer Scientist | Software Engineer



Oxfede.io



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/in/federicosaldarini



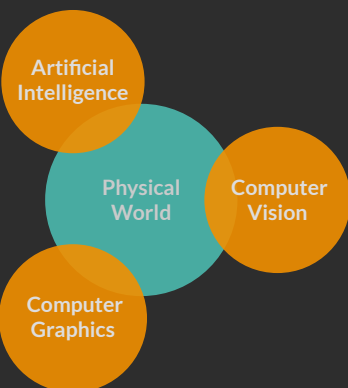
saldavonschwartz

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

## Education

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

## Focus



## Languages

Python • C • C++ • Obj-C • C#

## Frameworks

• Unity • Unreal • ARKit  
• Eigen • glm • CUDA  
• OpenGL • OpenCV • SciPy stack  
• PyTorch

## PROJECTS

### Automatic Panoramas

Image registration based on automatic feature matching.

### Deep Q-Network

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

### CUDA Path Tracer

A GPU-accelerated path tracer.

### 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.

### RED Patterns

*Immersion Award, 45th Festival du Nouveau Cinema.*  
VR experience in UE4 including depth-captured environments and actors.

## RESEARCH

Wendy Ju, Sharon Yavo-Ayalon, Ilan Mandel, Federico Saldarini, Natalie Friedman, Srinath Sibi, J. D. Zamfirescu-Pereira, and Jorge Ortiz. 2020. Tracking Urban Mobility and Occupancy under Social Distancing Policy. Digit. Gov.: Res. Pract. 1, 4, Article 32 (Oct. 2020).

Stephanie Claudino Daffara, Federico Saldarini, Balasaravanan Thoravi Kumaravel, and Björn Hartmann. 2020. AuthorIVE: Authoring Interactions for Virtual Environments through Disambiguating Demonstrations. Master's thesis. EECS Department, University of California, Berkeley.

Federico Saldarini. 2010. Waveshaping: from Csound to Cocoa. In The Audio Programming Book, Richard Boulanger and Victor Lazzarini (Eds.). The MIT Press, Cambridge, MA., DVD Ch. 34.

## EXPERIENCE

08/20  
Present

### Software Engineer

Apple, Special Projects Group

Visualization of algorithms for autonomous systems.

04/20  
Present

### Research Engineer / Co-Author (Volunteer)

Future Automation Research Lab, Cornell Tech

Collaborating with researchers from Cornell's FAR Lab on applying machine learning / vision to videos / images to extract statistics about COVID19-related social distancing practices in NY City.

Berkeley Institute of Design, UC Berkeley

Collaborating with researchers from UCB's BID Lab on an authoring tool for XR environments based on programming by demonstration (PbD).

11/14  
Present

### Consultant: VR / AR | Graphics / Vision | iOS

R&D of entertainment, training and educational applications involving AR, VR and interfacing with custom physical devices. Worked with Unity, Unreal, custom engines, ARKit, Vuforia, OpenCV, OpenGL, CUDA and iOS/Metal.

Some of the companies I've worked with are:

Crystal Pier Software • Piper • RED Patterns • Endless Riff • Boon VR • Magic Instruments • Wiggle Planet • Shyp • Shopular • Live Nation • Interview Cake Basic Space

02/14  
10/14

### Software Engineer

Anki

Worked on native iOS (including Bluetooth), Unity and AI planner (C++) code for Anki Drive, an iOS game with physical robotic cars controlled by AI and humans. Prototyped (and implemented in production) a Unity plug-in for releasing subsequent versions of the game for iOS and Android from a unified codebase.

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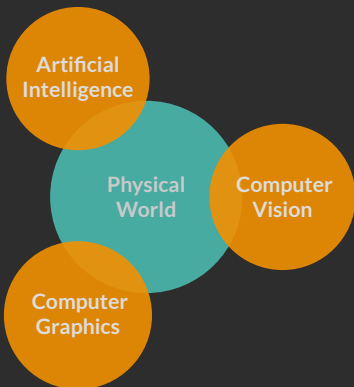
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## EXPERIENCE (continued)

01/13  
02/14

**Lead Software Engineer, iOS**  
Learnist

Lead a team of 4 engineers through all aspects of the architecture and implementation of the Learnist iOS app.

05/12  
12/12

**Software Engineer, iOS**  
Nextive /Globant

Developed mobile apps, including JP Morgan Chase's Mobile Banking and BlackHawk's GoWallet.