

# FEDERICO SALDARINI

Computer Scientist | Software Engineer



Oxfede.io



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/in/federicosaldarini



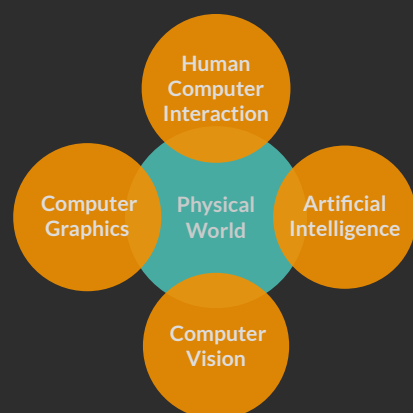
saldavonschwartz

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

C++ • Obj-C • Python • C# • Swift

## Frameworks

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

## 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.

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

Visual computing / autonomous systems.

04/20  
02/21

### Research Engineer / Co-Author

Cornell Tech - Future Automation Research Lab

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

UC Berkeley - Berkeley Institute of Design

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

11/14  
08/20

### 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.

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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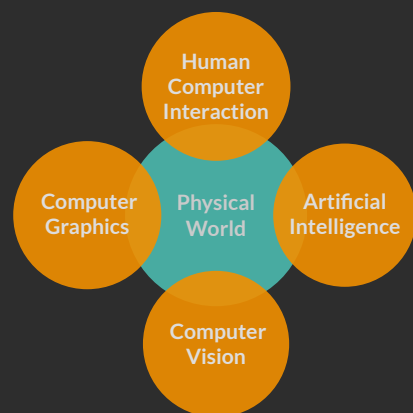
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## EXPERIENCE (continued)

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.