

# FEDERICO SALDARINI

Computer Scientist | Software Engineer



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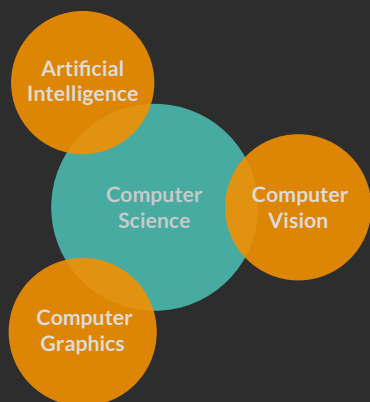


/in/federicosaldarini



saldavonschwartz

## Focus



## Languages

Python • C • C++ • Obj-C • C#

## Frameworks

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

## 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: 2020-05-14

## 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.

### 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.

## EXPERIENCE

04/20

Present

### Research Engineer

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.

### 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 | Computer Graphics | Bluetooth | iOS

My work as a consultant includes VR/AR experiences in Unity / Unreal / Vuforia, working with in-house engines in C++/GL/SDL and interfacing with physical devices via Bluetooth. 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, iOS / Unity

Anki

Worked across the full stack (native iOS, Bluetooth connectivity and C++ AI planner) of Anki Drive, an iOS game with physical robotic cars controlled by AI and humans. Also prototyped a system for communication between Bluetooth LE stack, AI-planner and Unity, in order to release subsequent versions of the game for both iOS and Android through a unified codebase.

01/13

02/14

### Lead Software Engineer, iOS

Learnist

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

05/12

12/12

### Software Engineer, iOS

Nextive (acquired by Globant)

Developed user-facing and business-logic features mobile apps, including J.P Morgan / Chase's Mobile Banking and BlackHawk's GoWallet.