FEDERICO SALDARINI

Computer Scientist | Software Engineer

🌐 0xfede.io

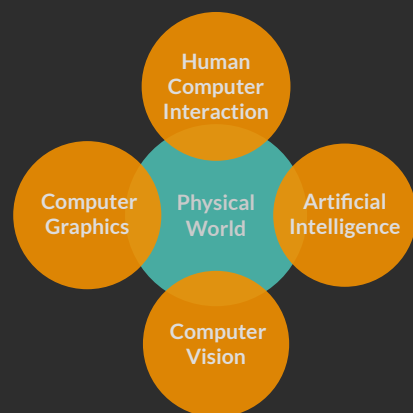✉ fede.saldarini@gmail.com

in /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

Human Computer Interaction · Physical World · Artificial Intelligence · Computer Graphics · Computer Vision

Languages

C++ • Obj-C • Python • C# • Swift

Frameworks

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

rev: 2021-12-07

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 (Volunteer)** 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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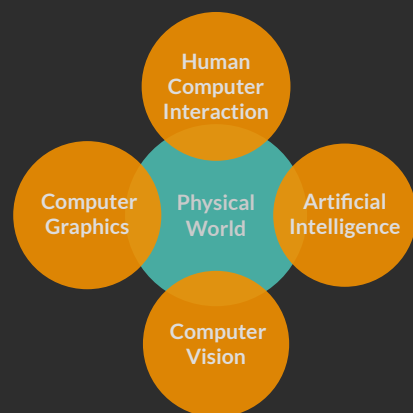✉️ fede.saldarini@gmail.com

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• OpenGL • OpenCV • SciPy stack

• PyTorch • Metal

EXPERIENCE (continued)

01/13 02/14	**Lead Software Engineer, iOS** Learnist

Led a team of four engineers through all aspects of the architecture and implementation of the Learnist iOS app for curated online learning.

05/12 12/12	**Software Engineer, iOS** Nextive /Globant

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