FEDERICO SALDARINI

Computer Scientist | Software Engineer

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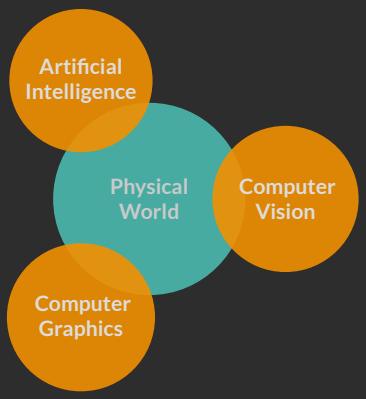
saldavonschwartz

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

rev: 2020-06-25

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.

RESEARCH

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

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.

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 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**

I've designed and implemented VR/AR experiences with Unity, Unreal, ARKit and Vuforia. I've also worked on custom engines in C++/GL/SDL and worked on projects interfacing with physical devices.

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 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 (and subsequently implemented in production, as part of a team) a system and Unity plug-in 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 /Globant

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