FEDERICO SALDARINI
Computer Scientist | Software Engineer

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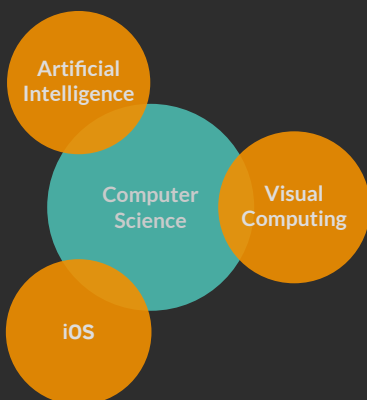
in /in/federicosaldarini

github saldavonschwartz

Focus ————

- **Artificial Intelligence**
- **Computer Science**
- **Visual Computing**
- **iOS**

Languages ———

Python • C • C++ • Obj-C • C#

Frameworks ——

- PyTorch
- Numpy
- SciPy
- Eigen
- glm
- xtensor
- OpenGL
- OpenCV
- matplotlib
- LaTeX
- Jupyter
- Unity
- Unreal

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

PUBLICATIONS

2010   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.

PROJECTS IN AI / VISUAL COMPUTING

⎘ Automatic Panorama Stitcher
A pipeline for warping images via planar reprojection based on feature matching.

⎘ NNKit
A Python framework for implementing dynamic neural networks.

⎘ Deep Q-Network
Implementation of DeepMind's reinforcement learning algorithm and testing in OpenAI Gym.

⎘ Digits
A neural network classifier implemented in Python and deployed to iOS via Obj-C++ and OpenCV.

⎘ GPUKit
A C++ framework for OpenGL rendering.

⎘ VRTeleport
A C++ plugin for VR locomotion in Unreal Engine.

EXPERIENCE

■ 01/19 - Engine Engineer
Crystal Pier Software
- Ported a C game from SDL 1.x to SDL 2.x.
- Currently designing a modern ECS engine to re-implement the game on top of, in order to enhance both its performance and visual features.

■ 05/16 - VR Engineer
Boon VR
- Prototyped medical training experiences integrating 360 video and interactive overlays in Unity / Unreal.
- Researched methods to reproject cg content onto 360 videos.

■ 03/17 - Engine Engineer
Piper
- Worked on general optimizations in a GL ES engine for Raspberry Pi.

■ 02/16 - iOS + Bluetooth Engineer
Magic Instruments
- Implemented a Bluetooth protocol and karaoke-style engine for iOS devices to interact with an experimental electronic guitar.

■ 02/17 - VR Engineer / Co-Creator
RED Patterns • [Immersion Award, 45th FNC]
- Implemented a room-scale VR experience in Unreal, including depth-captured environments and actors. Commissioned by SAT, Canada.

■ 08/15 - AR Engineer
Wiggle Planet
- Worked on 3D transformation / projection code in a custom GL engine interfacing with Vuforia SDK in iOS.

■ 11/16 - VR Engineer
Endless Riff
- Rigged character models and optimized precomputed lighting in Unity virtual reality scenes.

■ 02/14 - iOS + Unity Engineer
Anki
- Worked on native iOS game with robotic cars controlled by AI and humans via Bluetooth.
- Prototyped a system for communication between BLE stack, AI-planner and Unity.

OTHER EXPERIENCE: iOS, full-time & contract, 2012-2017

Shyp • Shopular • Live Nation • Interview Cake • Basic Space • Learnist • Nextive