FEDERICO SALDARINI

Computer Scientist | Software Engineer

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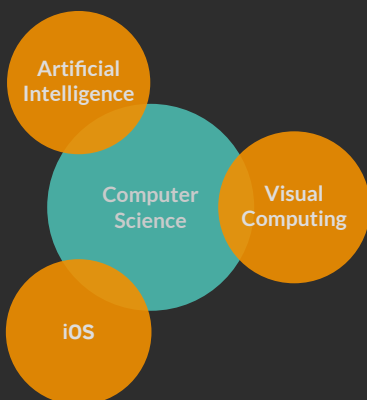
in /in/federicosaldarini

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.
2009	Music Synthesis	Berklee College of Music. Boston, MA.

Relevant Coursework (for credit and audited)
- Artificial Intelligence
- Machine Learning
- Computer Graphics
- Computational Photography
- 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 - Graphics / Game Engineer
Crystal Pier Software

Porting an OSX / Windows game from SDL1 to SDL2 and optimizing the game's underlying sprite-based graphics library.

■ 05/16 - VR Engineer
Boon VR

Prototyped VR environments integrating interactive features and 360 video in Unity and Unreal Engine.

■ 03/17 - Graphics Engineer
Piper

Researched optimization methods for OpenGL ES voxel engine on Raspberry Pi platform.

■ 02/16 - iOS / Bluetooth Engineer
Magic Instruments

Implemented a Bluetooth protocol and music engine for iOS devices to interact with an electronic guitar.

■ 02/17 - VR Engineer / Co-Creator
RED Patterns • [Immersion Award, 45th FNC]

Implemented a room-scale VR experience including depth-captured environments and actors. Comissioned by SAT, Canada.

■ 08/15 - AR Engineer
Wiggle Planet

Worked on viewport / transform-related code in a custom engine interfacing with Vuforia SDK.

■ 11/16 - VR Engineer
Endless Riff

Rigged character models and optimized precomputed lighting in virtual reality scenes.

■ 02/14 - iOS / Unity Engineer
Anki

Worked on Drive game for iOS and R&D on interfacing Unity with C++ AI-planner and Bluetooth LE stack.

OTHER EXPERIENCE: iOS FULL-TIME & CONTRACT | 2012-2017

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