Marcel Santana Santos
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EDUCATION

M.S. Computational Science & Engineering, Universidade Federal de Pernambuco, 2018-
Advisor: Tsang Ing Ren

B.A. Computer Engineering, Universidade Federal de Pernambuco, 2013-2018
Deep Learning approach for denoising Path-Traced images.
GPA: 9.18/10

EMPLOYMENT

07/2019 - 03/2020	Texas A&M University - Visiting Assistant Researcher Supervisor: Dr. Nima Kalantari Deep Learning applied to Computer Graphics and Computer Vision.
2017 - 2018	OKI Brasil - Undergraduate Researcher Facial biometric system using machine learning and computer vision.
2015 - 2017	Voxar Labs - Undergraduate Researcher http://www.cin.ufpe.br/~voxarlabs/ Computer vision and deep learning research.

R&D PROJECTS

2019 - 2019	Motorola - Researcher Computational photography pipeline with Deep Learning
2016 - 2017	Simplifique GP - Undergraduate researcher Developed a data intensive rendering system capable of rendering several thousands of architectural data in real-time on iPad.
2014 - 2015	LG Electronics - Undergraduate researcher Developed an image enhancement system to Android.

PUBLICATIONS

SANTOS, M., TSANG REN, and NIMA KALANTARI. 2020. Single Image HDR Reconstruction Using a CNN with Masked Features and Perceptual Loss. ACM Trans. Graph. 39, 4, Article 1 (July 2020), 10 pages. (ACM SIGGRAPH 2020)

TEIXEIRA, Joao Marcelo ; FIGUEIREDO, L. S. ; MAGGI, L ; TEICHRIEB, Veronica ; **SANTOS, M. S.** ; ARAÚJO, Cristiano . An Analytics Framework for Augmented Reality Applications. *SBC JOURNAL ON 3D INTERACTIVE SYSTEMS*, v. 9, p. 26, 2018.

SANTOS, M., TEIXEIRA, J., FIGUEIREDO, L., TEICHRIEB, V., AND ARAUJO, C. Analyzing AR viewing experience through analytics heat maps for augmented content. *Virtual and Augmented Reality (SVR), 2017 19th Symposium on*. IEEE, 2017.

SKILLS

Research & programming experience in deep learning, computer graphics, computer vision and image processing.
Knowledge of calculus, advanced linear algebra, statistics, numerical methods, shader writing and optimization, and computer architecture.
Languages: C++, Python, Halide, Go, R, MatLab, JavaScript, Haskell
Frameworks/Libraries: OpenCV, TensorFlow, Keras, pytorch, scikit-learn, NumPy, OpenGL, QT, ARKit, ARCore
Databases: MySQL, Oracle, MongoDB
Tools: GIT, CMAKE, Xcode, Visual Studio, Android Studio

SELECTED PROJECTS

2018 — Deep Shading
- Implementation of the paper “Deep shading: Convolutional Neural Networks for Screen-Space Shading” with Keras.
- A set of buffers are provided to a CNN in order to generate different shading effects (such as Ambient Occlusion, Depth of Field, Global Illumination and Sub-surface Scattering).

2018 — Semantic Segmentation
- Implementation of Semantic Segmentation Deep Learning architectures in Keras.

2018 — Path Tracer Denoiser
- Tackle the Monte Carlo Noise present in Path Traced images.
- Build a Convolutional Neural Network that delivers a filter able to generate noise-free images from noisy ones.

2017 — Path Tracer in C++
- Global illumination algorithm implementation via unbiased Monte Carlo Path Tracing.

PROFESSIONAL SERVICE

2018 — ACM SIGGRAPH Student Volunteer

TEACHING

03/13 - 11/16 — Teaching Assistant for Linear Algebra for Computation
11/14 - 06/17 — Teaching Assistant for Graphical Processing
11/16 - 06/17 — Teaching Assistant for Signal and Systems

IDIOMS

Portuguese (native language) and English (Fluent).

REFERENCES

Dr. Tsang Ing Ren
Adjunct Professor
Computer Science Center
Universidade Federal de Pernambuco (UFPE)

Dr. Nima Khademi Kalantari
Assistant Professor
Computer Science and Engineering Department
Texas A&M University