Lucas Daniel Lo Vercio, Ph.D.

Specialist, ML in Med. Imaging. University of Calgary, Calgary, AB, Canada

https://www.researchgate.net/profile/Lucas_Lo_Vercio | https://github.com/lucaslovercio/ | https://www.linkedin.com/in/lucas-lo-vercio/

Profile

I am a computer scientist with a strong background in mathematics, researching in medical and biological images analysis and machine learning. Furthermore, I am highly experienced in university-level teaching and mentoring in systems engineering. I consider myself a problem-solving professional in data science and image processing.

Experience

2023-date	**Specialist, Machine Learning in Medical Imaging,** University of Calgary, Canada
2018-2023	**Postdoctoral associate, Eyes High Postdoctoral Fellow (2018-2020),** University of Calgary, Canada
2017-2018	**Postdoctoral Fellow,** CONICET, PLADEMA-UNCPBA. Argentina
2012-2017	**PhD Fellow,** CONICET, PLADEMA-UNCPBA. Argentina
2012-2019	**Graduate Teaching Assistant,** Facultad de Ciencias Exactas, UNCPBA, Argentina
2011-2012	**Software Developer,** UNITECH S.A., Buenos Aires, Argentina

Relevant Education

2012-2017	**PhD in Computational and Industrial Mathematics,** Thesis: Feature engineering and machine learning for intravascular ultrasound segmentation. UNCPBA, Argentina
2005-2011	**Systems Engineer,** Final project: Multiresolution visulization of topographic meshes. UNCPBA, Argentina
2005-2010	**Programmer Analyst,** UNCPBA, Argentina

Featured Publications

For a complete list of publications, please refer to my profiles in ResearchGate and Google Scholar.

Lucas D. Lo Vercio, Rebecca M. Green, Samuel Robertson, et al. *Segmentation of Tissues and Proliferating Cells in Light-Sheet Microscopy Images of Mouse Embryos Using Convolutional Neural Networks.* IEEE Access. 2022; 11, 105084-105100.

Lucas Lo Vercio, Kimberly Amador, Jordan J. Bannister, et al. *Supervised machine learning tools: a tutorial for clinicians.* J Neural Eng. 2020; 17 (6).

Lucas Lo Vercio, Mariana del Fresno, Ignacio Larrabide. *Lumen-intima and media-adventitia segmentation in IVUS images using supervised classifications of arterial layers and morphological structures.* Comput. Methods Programs Biomed. 2019. 177, 113-121.

Lucas Lo Vercio, Mariana Del Fresno, Ignacio Larrabide. *Detection of morphological structures for vessel wall segmentation in IVUS using random forests.* Proc. SPIE 10160, 12th International Symposium on Medical Information Processing and Analysis. 2017.

Lucas Lo Vercio, José Ignacio Orlando, Mariana del Fresno, Ignacio Larrabide. *Assessment of image features for vessel wall segmentation in intravascular ultrasound images.* Int. J. Comput. Assisted Radiol. Surg. 2016. 11, 1397–1407.

Teaching Experience

2023	**MDSC 689.11 - Medical Imaging Applications,** Guest lecturer.	*UCalgary*
2022	**Workshop: Introduction to Image Processing using Open-Source Software,** Instructor.	*UCalgary*
2018	**Technological Applications for Conservation,** Instructor.	*UNCPBA*
2014, 2015, 2017	**Medical Imaging workshop,** Teaching Assistant.	*UNCPBA*
2009-2018	**Software Development Methodologies I,** Teaching Assistant.	*UNCPBA*
2016-2018	**Information Technologies for Organizations,** Teaching Assistant.	*UNCPBA*
2011-2019	**Design of Compilers I,** Teaching Assistant.	*UNCPBA*
2011	**Data Storage Structures,** Teaching Assistant.	*UNCPBA*

Skills

Programming Languages: Python (OpenCV, Tensorflow, scikit-image, scikit-learn, pandas), C/C++ (CUDA, OpenGL, VTK, ITK), Java, MATLAB, SQL, Assembly, Bash.

Machine Learning: SVMs, Random Forests, ECOC, CNNs, GANs.

Software/tools: PyCharm, Microsoft Visual Studio, Visual Studio Code, Eclipse IDE; MATLAB; UML/IBM Rational Software Architect; Paraview, 3DSlicer, ImageJ; Git/GitHub, MySQL/MySQL Workbench, LaTeX.

Image processing: Denoising, textural analysis, edge detection, segmentation (deformable models, graph-cut, U-net), registration (landmark-, intensity-, and segmentation-based).

Biomedical Imaging: Intravascular Ultrasound (IVUS), Common Carotid Artery Ultrasound (CCA US), Optical Coherence Tomography (OCT), Computed Tomography (CT), Optical Projection Tomography (OPT), micro–Computed Tomography (micro-CT), Light-Sheet Microscopy (LSFM).

Languages

Spanish (Native)

English (CELPIP October 2022)