

Allan da Silva Pinto

Ph.D. Candidate in Computer Science

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Research Interests

I received the B.Sc. degree in Computer Science from University of São Paulo (USP), Brazil, in 2011, and the M.Sc. degree in Computer Science from University of Campinas (Unicamp), Brazil, in 2013. Currently, I am a Ph.D. Candidate, also in Computer Science, at Institute of Computing, Unicamp, Brazil, having completed a one-year doctoral internship at the University of Notre Dame. My research focuses on the areas of image and video analysis, biometrics, computer forensics, pattern recognition, and computer vision in general, with a particular interest in presentation attack detection in biometric systems.

Education

- 2014 – 2018 **Ph.D. in Computer Science**, *University of Campinas (Unicamp)*, Campinas, SP, Brazil. Ongoing.
- 2011 – 2013 **M.Sc. in Computer Science**, *University of Campinas (Unicamp)*, Campinas, SP, Brazil. Concluded.
- 2007 – 2011 **B.Sc. in Computer Science**, *University of São Paulo (USP)*, São Carlos, SP, Brazil. Emphasis on Embedded Systems. Concluded.
- 2001 – 2003 **Technician in Industrial Computer**, *Salesian University Center of São Paulo (Unisal)*. Campinas, SP, Brazil. Concluded.

Complementary Courses

- Problem-based Learning (PBL). Taught by the Max Planck College.
- Evaluation Processes. Taught by the Max Planck College .
- Rapid Development of 3D Games. Taught by the Semcomp (USP).
- Embedded C language for Microcontroller. Taught by the Freescale Semiconductor.
- Mobile Computing: An Introduction Practice. Taught by the Semcomp (USP).
- Intelligent Algorithms for Navigation, Location and Mapping. Taught by the Semcomp (USP).

Skills

- Programming C/C++, Python, Octave, and R.
- Background Linux OS., Biometrics, Machine learning, Computer vision, Image processing and analysis.
- Arts Amateur musician (transverse flute and Violoncello).

Languages

- Portuguese Native language.
- English Comprehends Well, Speaks Reasonably, Reads Well, Writes Well.

Professional Experience

Teaching

- 2012 – 2014 **Max Planck College, Indaiatuba, SP, Brazil**, Position: Assistance Professor.
Courses Taught: Computer Network, Computer Graphics, Compilers, Electrical Installations, Network Management.

Research

- 2016 – 2017 **DARPA Media Forensics (MediFor) Project**, *Research Assistant (Doctoral Exchange Program)*, Department of Computer Science and Engineering, University of Notre Dame, Advisor: Dr. Patrick J. Flynn, Dr. Walter J. Scheirer, and Dr. Anderson Rocha. Funding: University of Notre Dame.
- 2014 – To date **Spoofing Detection in Biometric Systems**, *Ph.D. Thesis*, Institute of Computing, University of Campinas, Advisor: Dr. Anderson Rocha. Funding: CNPq.
- 2011 – 2013 **A Countermeasure Method for Video-Based Face Spoofing Attacks**, *M.Sc. Thesis*, Institute of Computing, University of Campinas, Advisor: Dr. Anderson Rocha. Funding: CNPq.
- 2010 – 2011 **Swarm Intelligence Algorithms for Image Processing and Analysis.**, *Scientific Initiation*, São Carlos Institute of Physics, University of São Paulo, Advisor: Dr. Odemir Martinez Bruno. Funding: FAPESP.
- 2008 – 2009 **ChipCflow – A Tool for Execution Algorithms using the Dynamic Data Flow Model for Reconfigurable Hardware**, *Scientific Initiation*, Institute of Mathematics and Computer Sciences, University of São Paulo, Advisor: Dr. Jorge Luiz e Silva. Funding: FAPESP.

Company

- 2008 **Motorola**, *Telecommunication and cell phone manufacturing*, Jaguariúna, SP, Brazil, Position: Production operator.
Detailed achievements: Montage and testing of mobile phones and DSL modems.
- 2003 **GE Hydro Inepar**, *Energy and Automation*, Campinas, SP, Brazil, Position: Intern in Industrial Computer.
Detailed achievements: Technical drawings with AUTOCAD e EPLAN; Calibration of measurement and control instruments; Testing on electronic boards.

Refereed Journal Reviewer

- 1 IEEE Transactions on Information Forensics and Security (TIFS)
- 2 IEEE Signal Processing Letters (SPL)
- 3 IEEE Access – The Multidisciplinary Open Access Journal
- 4 Elsevier Computer Vision and Image Understanding (CVIU)
- 5 Elsevier Journal of Visual Communication and Image Representation (JVCI)

Publications

Refereed Journal Publications

- 1 **A. Pinto**, H. Pedrini, W. Robson Schwartz and A. Rocha, "Face Spoofing Detection Through Visual Codebooks of Spectral Temporal Cubes," in *IEEE Transactions on Image Processing (TIP)*, vol. 24, no. 12, pp. 4726-4740, Dec. 2015.
- 2 **A. Pinto**, W.R. Schwartz, H. Pedrini and A.R. Rocha, "Using Visual Rhythms for Detecting Video-Based Facial Spoof Attacks," in *IEEE Transactions on Information Forensics and Security (TIFS)*, vol. 10, no. 5, pp. 1025-1038, May 2015.
- 3 D. Menotti, G. Chiachia, **A. Pinto**, W. R. Schwartz, H. Pedrini, A. X. Falcão and A. Rocha, "Deep Representations for Iris, Face, and Fingerprint Spoofing Detection," in *IEEE Transactions on Information Forensics and Security (TIFS)*, vol. 10, no. 4, pp. 864-879, April 2015.

Book Chapters

- 1 **Allan Pinto**, Helio Pedrini, Michael Krumdick, Benedict Becker, Adam Czajka, Kevin W. Bowyer, and Anderson Rocha. In *Deep Learning in Biometrics*, chapter Counteracting Presentation Attacks in Face Fingerprint and Iris Recognition, page 49., CRC Press, 2018.
- 2 Tiago Carvalho, **Allan Pinto**, Ewerton Silva, Filipe de Oliveira Costa, Giulliano Roberto Pinheiro and Anderson Rocha, in *Escola Regional de Informática de Minas Gerais (ERI-MG)*, chapter Crime Scene Investigation (CSI): da Ficção à Realidade. VIIed., pp. 1-23, 2013.

Papers in Proceedings of Refereed Conferences

- 1 **Allan Pinto**, Daniel Moreira, Aparna Bharati, Joel Brogan, Kevin Bowyer, Patrick Flynn, Walter J. Scheirer and Anderson Rocha. Provenance Filtering for Multimedia Phylogeny. In *IEEE Intl. Conference on Image Processing (ICIP)*, 2017, Beijing. Proc. of the IEEE Intl. Conference on Image Processing (ICIP), 2017. p. 1-5.
- 2 Joel Brogan, Paolo Bestagini, Aparna Bharati, **Allan Pinto**, Daniel Moreira, Kevin Bowyer, Patrick Flynn, Anderson Rocha and Walter J. Scheirer. Spotting the Difference: Context Retrieval and Analysis for Improved Forgery Detection and Localization. In *IEEE Intl. Conference on Image Processing (ICIP)*, 2017, Beijing. Proc. of the IEEE Intl. Conference on Image Processing (ICIP), 2017. p. 1-5.
- 3 Aparna Bharati, Daniel Moreira, **Allan Pinto**, Joel Brogan, Kevin Bowyer, Patrick Flynn, Walter J. Scheirer and Anderson Rocha. U-Phylogeny: Undirected Provenance Graph Construction in the Wild. In *IEEE Intl. Conference on Image Processing (ICIP)*, 2017, Beijing. Proc. of the IEEE Intl. Conference on Image Processing (ICIP), 2017. v. 12. p. 1-5.
- 4 I. Chingovska, **A. Pinto**, H. Pedrini, W.S. Schwartz, A. Rocha and S. Marcel *et al.*, "The 2nd competition on counter measures to 2D face spoofing attacks," in *IAPR International Conference on Biometrics (ICB)*, Madrid, 2013, pp. 1-6.
- 5 **A.S. Pinto**, H. Pedrini, W. Schwartz and A. Rocha, "Video-Based Face Spoofing Detection through Visual Rhythm Analysis," in *Conference on Graphics, Patterns and Images (SIBGRAPI)*, Ouro Preto, pp. 221-228, 2012.

Abstracts in Proceedings of Refereed Conferences

- 1 **A.S. Pinto** and O.M. Bruno, "Métodos de inteligência de enxame para aproximação poligonal de contorno de imagens", in *XVIII Congresso de Iniciação Científica da UFSCAR (CIC-UFSCAR)*, 2010, São Carlos. Anais e eventos da UFSCar. São Carlos : Universidade Federal de São Carlos, 2010. v. 6. p. 396-396.
- 2 **A.S. Pinto** and J.L. Silva, "ChipCflow – Uma Ferramenta para execução de Algoritmos Utilizando o Modelo a Fluxo de Dados Dinâmico em Hardware Reconfigurável Circuito Matching e Instâncias", in *Simpósio Internacional de Iniciação Científica da USP (SIICUSP)*, 2009, São Carlos. ChipCflow - Uma Ferramenta para execução de Algoritmos Utilizando o Modelo a Fluxo de Dados Dinâmico em Hardware Reconfigurável Circuito Matching e Instâncias, 2009. v. 1. p. 1-1.

Summary of Scientific Production

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Other Information

- IEEE Signal Processing Society Membership.
- Google Scholar: <http://tinyurl.com/po8mvvs>.
- ORCID: <http://tinyurl.com/ologx6e>
- Researcher ID: <http://tinyurl.com/oxtjcps>