Vítor Albiero

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Education

University of Notre Dame   *Notre Dame, IN*

PH.D. IN COMPUTER SCIENCE AND ENGINEERING   *July 2022*

- **Dissertation:** Bias in Face Recognition: From Causes to Mitigation
- **Advisor:** Dr. Kevin W. Bowyer

Federal University of Paraná   *Curitiba, Paraná, Brazil*

M.S. IN COMPUTER SCIENCE   *July 2018*

- **Dissertation:** Multi-Label Action Unit Detection on Multiple Head Poses with Dynamic Region Learning, Convolutional Neural Networks and Recurrent Neural Networks

University of West Santa Catarina   *Videira, Santa Catarina, Brazil*

B.S. IN COMPUTER SCIENCE   *July 2015*

- **Dissertation**: Development of a Drone Guided Through Computer Vision Techniques

Professional Experience

Meta AI   *Menlo Park, CA*

RESEARCH INTERN   *July 2022 - Present*

- Researched projects involving face analysis, developing new models and tools.

University of Notre Dame   *Notre Dame, IN*

GRADUATE RESEARCH ASSISTANT   *August 2018 - June 2022*

- Revealed the existence and the causes for demographic "bias" in deep learning face recognition methods, collaborating with the Florida Institute of Technology.
- Trained and fine-tuned several CNN models with different loss functions and training dataset demographic balances, resulting in a deep analysis of gender "bias" on face recognition.
- Led a project on identity document to selfie matching on adolescents, in collaboration with the University of North Carolina Wilmington and the Catholic University of Chile.
- Supervised an undergraduate student to investigate "bias" in gender prediction commercial and open-source methods, and face recognition datasets curation.

Meta AI   *Menlo Park, CA*

RESEARCH INTERN   *July 2022 - October 2021*

- Researched projects involving face alignment, developed tracking models that do not require prior face detection steps.

Meta AI   *Menlo Park, CA*

RESEARCH INTERN   *June 2020 - September 2020*

- Developed and published a method called img2pose, where a novel approach to face alignment was proposed, directly predicting 6 degrees of freedom without the need of prior face detection.

Federal University of Paraná   *Curitiba, Paraná, Brazil*

GRADUATE RESEARCH ASSISTANT (PART TIME)   *July 2016 - July 2018*

- Designed two deep learning methods for facial expression recognition across varying head poses, resulting in two papers at major conferences.

Cia Olsen de Tratores Agro Industrial   *Caçador, Santa Catarina*

SYSTEM ANALYST   *April 2013 - July 2018*

- System analysis and development of ERP software
- Oracle database modeling and maintenance
- Integration between different company softwares
- Supervision of the I.T. sector

University of West Santa Catarina   *Videira, Santa Catarina, Brazil*

UNDERGRADUATE TEACHING ASSISTANT   *January 2013 - June 2013*

- Developed class exercises, tutorials and materials for the algorithms lab course.

Cia Olsen de Tratores Agro Industrial
Caçador, Santa Catarina

Intern
August 2012 - April 2013

- Customization of ERP applications
- Oracle database maintenance
- User support

Online Informática
Caçador, Santa Catarina, Brazil

Computer Technician
October 2010 - August 2012

- Computer equipment repair in general
- Support to users of commercial software
- Coordination of attendances

Research Presentations

Invited Presentation
Videira, Santa Catarina, Brazil

University of West Santa Catarina
November 2017

- Invited to talk about my research at the Computational Week, with the title: *"Facial Expression Recognition: what is it and how it works"*

Tutorial Presentation
Niterói, Rio de Janeiro, Brazil

XXX Conference on Graphics, Patterns and Images (SIBGRAPI)
October 2017

- Presented jointly with the IMAGO Research Group a tutorial titled "Beyond Flat Faces: Facial Image Analysis and Processing in the Wild", focusing in the "Facial Expression and Emotion Recognition" part.

Invited Presentation
Caçador, Santa Catarina, Brazil

SENAI/SC
May 2016

- Invited to present the project developed for the undergraduate final work, titled: *"Intelligent Drone Guided Through Computer Vision"*

Skills

Computer Skills	Python, Keras, Tensorflow, Caffe, SQL
Knowledge	Computer Vision, Machine Learning, Biometrics
Languages	Portuguese, English

Recent Publications

Vítor Albiero, Xingyu Chen, Xi Yin, Guan Pang, Tal Hassner. *"img2pose: Face Alignment and Detection via 6DoF, Face Pose Estimation,"* in Proceedings of the IEEE Conference in Computer Vision and Pattern Recognition (CVPR), 2021.

Vítor Albiero and Kevin W. Bowyer. *"Is Face Recognition Sexist? No, Gendered Hairstyles and Biology Are,"* in Proceedings of the British Machine Vision Conference (BMVC), 2020.

Vítor Albiero, Kai Zhang, Kevin W. Bowyer. *"How Does Gender Balance In Training Data Affect Face Recognition Accuracy?,"* in Proceedings of the International Joint Conference on Biometrics (IJCB), 2020.

Vítor Albiero, Nisha Srinivas, Esteban Villalobos, Jorge Perez-Facuse, Roberto Rosenthal, Domingo Mery, Karl Ricanek, and Kevin W. Bowyer. *"Identity Document to Selfie Face Matching Across Adolescence,"* in Proceedings of the International Joint Conference on Biometrics (IJCB), 2020.

Vítor Albiero, Kevin Bowyer, Kushal Vangara, Michael C. King. *"Does Face Recognition Accuracy Get Better With Age? Deep Face Matchers Say No,"* in Proceedings of the IEEE Winter Conference on Applications of Computer Vision (WACV), 2020.