



Emmanuel Iarussi

Computer Vision | Computer Graphics | Machine Learning

Personal
Age: 37 - 01/12/1988
emmanuel.iarussi@utdt.edu
emmanueliarussi.github.io/

Since 2017 **Research Fellow** Buenos Aires, Argentina
CONICET

Since 2022 **Assistant Professor - Tenure Track** Buenos Aires, Argentina
Universidad Torcuato Di Tella

Education

Address
Av. Pres. Figueroa
Alcorta 7350 (UTDT)
Buenos Aires
CP 1428
Argentina

Tel & Twitter
(+54 11) 5169 7847
@emmaiarussi

Interest Areas
AI ★★★★★
3D CG ★★★★★
Generative ★★★★★
Imaging ★★★★★
Vision ★★★★★

Languages
Spanish ★★★★★
English ★★★★★
French ★★★★★
Italian ★★★★★

2016 - 2017 **Postdoctoral Fellow** Vienna, Austria
ISTA Austria - Digital Fabrication

2012 - 2015 **PhD. Computer Science** Sophia Antipolis, France
INRIA GraphDeco Team - [Link to PhD Thesis](#)
Advisors: Adrien Bousseau, George Drettakis

2006 - 2012 **Systems Engineer** Tandil, Argentina
UNICEN - Facultad de Ciencias Exactas
Advisors: Alejandro Clausse, Virginia Cifuentes

2006 - 2011 **Programmer** Tandil, Argentina
UNICEN - Facultad de Ciencias Exactas

Publications

Enhancing and advancements in deep learning for melanoma detection: A comprehensive review. Virgens, G.S., Iarussi, E., et al. *Computers in Biology and Medicine* (2025): 110533. doi:doi.org/10.1016/j.combiomed.2025.110533

Improving Realism in Abdominal Ultrasound Simulation Combining a Segmentation-Guided Loss and Polar Coordinates training. Vitale, S., Iarussi, E., Orlando, J.I., and Larrabide, I. *Medical Physics* (2025). doi:doi.org/10.1002/mp.17801

DUDF: Differentiable Unsigned Distance Fields with Hyperbolic Scaling. Fainstein, M., Siless, V., & Iarussi, E. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024)*.

VesselVAE: Recursive Variational Autoencoders for 3D Blood Vessel Synthesis. Feldman, P., Fainstein, M., Siless, V., Delrieux, C., Iarussi, E. *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2023). Lecture Notes in Computer Science, vol 14220. Springer, Cham.* doi:10.1007/978-3-031-43907-0_7.

Bone-GAN: Generation of virtual bone microstructure of high resolution peripheral quantitative computed tomography. Thomsen, F. S. L., Iarussi, E., Borggreffe, J., Boyd, S. K., Wang, Y., Battisti, M. C. *Medical Physics* (2023). ISSN: 2473-4209. doi: 02/mp.16482.

Learning normal asymmetry representations for homologous brain structures. Deangeli, D., **Iarussi, E.**, Princich, J. P., Bendersky, M., Larrabide, I., Orlando, J. *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2023). Lecture Notes in Computer Science, vol 14220. Springer, Cham. doi: 10.1007/978-3-031-43993-3_8.*

NORHA: A NORmal Hippocampal Asymmetry deviation index based on one-class novelty detection and 3D shape features. Deangeli, D., Iarussi, F., Külsgaard, H., Braggio, D., Princich, J. P., Bendersky, M., **Iarussi, E.**, Larrabide, I., Orlando, J. I. *Brain Topography (2023). ISSN: 1573-6792. doi:10.1007/s10548-023-00985-6.*

Learning Deep Features for Stain-free Live-dead Human Breast Cancer Cell Classification. Pattarone, G., Acion, L., Simian, M., **Iarussi, E.** *Nature Scientific Reports (2021). ISSN: 2045-2322. doi: 10.1038/s41598-021-89895-w.*

Generative Modelling of 3D in-silico Spongiosa with Controllable Micro-Structural Parameters. **Iarussi, E.**, Thomsen, F. and Delrieux, C., *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020). Lecture Notes in Computer Science, vol 12266. Springer, Cham. doi: 10.1007/978-3-030-59725-2_76.*

Improving realism in patient-specific abdominal Ultrasound simulation using CycleGANs. Vitale, S., Orlando, J.I., **Iarussi, E.** and Larrabide, I. *International Journal of Computer Assisted Radiology and Surgery, 1-10 (2019). ISSN: 1861-6429. doi: 10.1007/s11548-019-02046-5.*

FlexMaps: Computational Design of Flat Flexible Shells for Shaping 3D Objects. Malomo, L., Pérez, J., **Iarussi, E.**, Pietroni, N., Miguel, E., Cignoni, P. and Bickel, B. *ACM Transactions on Graphics (SIGGRAPH Asia) 37.6 (2018). ISSN: 0730-0301. doi: 10.1145/3272127.3275076.*

CoreCavity: Interactive Shell Decomposition for Fabrication with Two-Piece Rigid Molds. Kazutaka Nakashima , Thomas Auzinger, **Emmanuel Iarussi**, Ran Zhang, Takeo Igarashi, Bernd Bickel. *ACM Transactions on Graphics (SIGGRAPH) 37.4 (2018). ISSN: 0730-0301. doi: 10.1145/3197517.3201341..*

WrapIt: Computer-Assisted Crafting of Wire Wrapped Jewelry. **Emmanuel Iarussi**, Wilmot Li, and Adrien Bousseau. *ACM Transactions on Graphics (SIGGRAPH Asia) 34.6 (2015). doi:10.1145/2816795.2818118. ISSN: 0730-0301.*

BendFields: Regularized Curvature Fields from Rough Concept Sketches. **Emmanuel Iarussi**, David Bommes, and Adrien Bousseau. *ACM Transactions on Graphics (TOG) 34.3 (2015): 24. ISSN: 0730-0301. doi:10.1145/2710026.*

The Drawing Assistant: Automated Drawing Guidance and Feedback from Photographs. **Emmanuel Iarussi**, Adrien Bousseau, and Theophanis Tsandilas. *ACM Symposium on User Interface Software and Technology (UIST). ACM, 2013. ISBN: 978-1-4503-8635-7. doi:10.1145/2501988.2501997*

Awards

- 2024 **Second Best Paper Award (LatinX - CVPR 2024)**
DUDF is able to leverage general-shape neural representation by learning a hyperbolic scaled unsigned distance field.
- 2022 **Top 100 cancer Nature Scientific Reports papers in 2021**
Learning Deep Features for Stain-free Live-dead Human Breast Cancer Cell Classification.
- 2021 **Salesforce AI Research Grant**
Bone-GAN: Towards an accurate diagnosis of osteoporosis from routine body CTs.
Grant: USD 50.000,00.
- 2020 **Kaggle open data research grant 2020**
Improving realism in patient-specific abdominal Ultrasound simulation using CycleGANs
Grant: USD 2.500,00.

Research Funding

- 2024 **Project SLOAN Foundation**
VisDecode, an AI tool capable of automatically interpreting and providing feedback to enhance scientific plots.
Grant: USD 70.000,00.
- 2023 **Project CLIAS - IECS**
Development of a remote AI system for analysing fixed cervicovaginal smears (PAPs) images.
Grant: USD 20.000,00.
- 2023 **Project Civic Health**
Developing tools to reduce toxic polarization in Telegram using fine-tuned Large Language Models. Co-advisor: Joaquin Navajas.
Grant: USD 5.000,00.
- 2021 **Project PIP / ID: PIP 2021-2023 GI - 11220200102981CO**
Accurate diagnosis of osteoporosis from routine body CT images using antagonistic generative models.
Grant: USD 10.000,00.
- 2020 **Project PID UTN / ID: SIUTNBA0005534**
Redes Generativas para el Diseño 2D/3D Interactivo y Síntesis Multivista.
Grant: \$644.225,68.
- 2020 **Project PID UTN / ID: SIUTNBA0005139**
CrossMatch: Detección de Correspondencias de Dominio Cruzado mediante Deep Learning.
Grant: \$1.143.878,00.
- 2019 **Project PICT-Joven / ID: PICT-2018-04517**
Deep multi-view descriptors for matching line drawings.
Grant: USD 3.500,00.
- 2017 **Nvidia Research Grant**
Dense Cross-Domain Features for 2D/3D Matching using Deep Convolutional Networks.
Grant: USD: 3.800,00.

Teaching

Since 2023	Professor UTDT Métodos Computacionales <i>Licenciatura en Tecnología Digital</i> Contact: Agustín Gravano · agravano@utdt.edu	Buenos Aires, Argentina
Since 2022	Professor UTDT Tecnología Digital IV: Redes de Computadoras Contact: Agustín Gravano · agravano@utdt.edu	Buenos Aires, Argentina
Since 2022	Professor UTDT Visualización y Análisis de Datos <i>Optativa para todas las carreras - Track de Ciencia de Datos</i> Contact: Gustavo Vulcano · gvulcano@utdt.edu	Buenos Aires, Argentina
2022 - 2023	Adjunct Faculty Denver University Deep Learning: Model Design and Application. <i>MS in Data Science</i> Contact: Sean Connin · sean.connin@du.edu	Denver, US (Remote)
2019 - 2021	Assistant Professor FCEN-UBA Algorithms and Data Structures II & Fundamentals of Computer Graphics Licenciatura en Ciencias de la Computación Contact: Santiago Figueira · santiago@dc.uba.ar	Buenos Aires, Argentina
2018 - 2021	Assistant Professor - UTN Fundamentals of Computer Graphics. Contact: Patricia Cibeira pcibeira@frba.utn.edu.ar	Buenos Aires, Argentina
2014 - 2015	Assistant Professor - IUT, Université Côte d'Azur Introduction à l'Interaction Homme-Machine Systèmes d'informations et Gestion de Données	Nice, France
2010 - 2011	Assistant Professor UNICEN Computer Architecture Ingeniería en Sistemas Professor: Elias Todorovich · etodorov@exa.unicen.edu.ar	Tandil, Argentina
2009 - 2011	Assistant Professor UNICEN Software Development Methodologies. Ingeniería en Sistemas Professor: Claudia Marcos · cmarcos@exa.unicen.edu.ar	Tandil, Argentina

Teaching (Postgraduate)

2017 - 2022	Data Visualization MiM - Master in Management + Analytics / UTDT Contact: Gustavo Vulcano · gvulcano@utdt.edu	Buenos Aires, Argentina
2017 - 2022	Fundamentals of Computer Graphics Doctorado en Ingeniería, mención Procesamiento de Señales e Imágenes / UTN. Contact: Ricardo Armentano · armen@frba.utn.edu.ar	Buenos Aires, Argentina
2017 - 2022	Information Visualization Maestría en Explotación de Datos y Descubrimiento del Conocimiento / FCEN UBA. Contact: Marcelo Soria · soria@agro.uba.ar	Buenos Aires, Argentina
2020 - 2021	Graphics Representation and Data Visualization Diplomatura Universitaria en Inteligencia Artificial / UNICEN Contact: Andrés Díaz-Pace · adiazpace@gmail.com	Tandil, Argentina
2020- 2021	Machine Learning Maestría en Informática y Sistemas / UNPA. Contact: Claudio Delrieux · cad@uns.edu.ar	Río Gallegos, Argentina
2018 - 2019	Scientific Communication Master en Optimización y Seguridad de Sistemas / UTN FRBA. Contact: Carolina Rodrigo · crodrigo@frba.utn.edu.ar	Buenos Aires
2019 - 2020	Information Visualization Maestría en Minería de Datos / UTN FRP Contact: Ana Silvia Haedo · anasicorreio@outlook.com	Paraná, Argentina

Other Short Courses and Trainings

2019 - 2020	CreativelA: Generative Adversarial Networks in PyTorch / UNS Lecturer. Creative AI tools training course for UNS teachers and researchers.	Bahía Blanca, Argentina
2019 - 2020	CreativelA: Generative Adversarial Networks in PyTorch / UNSA Lecturer. 48 JAIIO workshop course.	Salta, Argentina
2017 - 2018	Visualization Techniques for Big Data / UBA Lecturer. Visualization training course. <i>CitepLab: Big Data</i> workshop.	Buenos Aires, Argentina

Other Activities

2022 - 2024	Advisory committee member Metadocencia.	Buenos Aires, Argentina
2018 - 2022	PhD. Committee member PhD in Engineering, Signal and Image Processing mention. UTN FRBA.	Buenos Aires, Argentina
2011 - 2012	Academic Council student member. Facultad de Ciencias Exactas. UNICEN.	Tandil, Argentina
2011 - 2012	Computing Department student member Facultad de Ciencias Exactas. UNICEN.	Tandil, Argentina

Scholarships

2012 - 2015	Doctoral Scholarship <i>Computer Assisted Realistic Drawing.</i> Agence Nationale de la Recherche. Advisors: Adrien Bousseau & George Drettakis.	Nice, France
2014	Internship ADOBE Research <i>Computer-Assisted Crafting of Wire Wrapped Jewelry.</i> Advisor: Wilmot Li.	San Francisco, CA
2011	Scientific training scholarship BENTR10 <i>Texture Detection in Digital Images.</i> Comisión de Investigaciones Científicas. UNICEN. Advisors: Alejandro Clausse & María Virginia Cifuentes.	Tandil, Argentina

Students

In progress	Paula Feldman PhD Thesis co-advisor. Started 2021. Project: <i>Generative modeling and synthesis of vascular anatomical structures.</i>	UNS
In progress	Hugo Massaroli PhD Thesis co-advisor. Started 2022. Project: <i>Validation of a Deep Learning Model for the Diagnosis of Alzheimer's Disease Using the 18F-FDG PET Method in a Cohort of Latin American Patients.</i>	FCEN - UBA
In progress	Martin Sinnona Master Thesis advisor. Started 2023. Project: <i>Distilling Design Decisions in Visualizations using pixels-to-text Foundation Models.</i>	FCEN - UBA
In progress	Santiago Corley Master Thesis advisor. Started 2023. Project: <i>User assistance in CAD interfaces using LLMs.</i>	FCEN - UBA

2022 - 2024	Valentina Bessonart Engineering Thesis advisor. Started 2023. Project: <i>Space Colonization: Algorithmic Approach for the Generation of Blood Vessel Trees.</i>	UNICEN
2022 - 2024	Sara Urbietta Engineering Thesis advisor. Started 2023. Project: <i>Space Colonization: Algorithmic Approach for the Generation of Blood Vessel Trees.</i>	UNICEN
2022 - 2024	Martin Pustilnik Master Thesis advisor. Started 2022. Project: <i>Dropout Prediction Models for the National University of Hurlingham.</i>	FCEN - UBA
2022 - 2024	Miguel Fainstein Master Thesis advisor. Started 2022. Project: <i>Differentiable Unsigned Distance Fields with Hyperbolic Scaling.</i>	FCEN - UBA
2022 - 2023	Francisco Gonzalvo Master Thesis advisor. Started 2023. Project: <i>Real Estate Valuation in Buenos Aires, an Interactive Tool Development.</i>	UTDT
2022 - 2023	Federico Rodriguez Master Thesis advisor. Started 2023. Project: <i>Market Price Estimation for Used Mobile Phones Using Machine Learning Techniques.</i>	UTDT
2021 - 2022	Cristian Galli Master Thesis advisor. Project: <i>Estrategias de muestreo 3D para el aprendizaje profundo de superficies implícitas.</i>	FCEN - UBA
2020 - 2021	Daniel Bauer Master Thesis advisor. Project: <i>Implementación de un motor de rendering no-fotorrealista en python.</i>	UNC
2020 - 2021	Francisco Iarussi Engineering thesis. Advisors: Prof. Dr. Ignacio Larrabide, Dr. Emmanuel Iarussi. Project: <i>Caracterización de asimetrías en hipocampos usando técnicas de inteligencia artificial.</i>	UNICEN
2020 - 2021	Leonardo Maestri EVC-CIN scholarship advisor. Project: <i>CrossMatch: detección de correspondencias de dominio cruzado mediante deep learning.</i>	UTN FRBA
2019 - 2020	Gisela Pattarone Master thesis. Advisors: Prof. Dr. Joschka Bödecker, Emmanuel Iarussi. Project: <i>Automatic breast cancer cell classification using deep convolutional neural networks.</i>	FFyB - UBA
2017 - 2020	Pablo Navarro Internship advisor. Project: <i>Dense cross-domain features for 2D-3D matching using deep convolutional networks.</i>	UTN FRBA

Examining Committee

- 2023 **Examining committee member** Buenos Aires, Argentina
Master Thesis. Student: Martina Lopez Abades. Dissertation: *"Optimization of Marketing Strategies Based on Behavioral Segmentation: Customer Clustering Algorithms and Proto-Personas for Identifying Profiles and Preferences"*. UTDT.
- 2023 **Examining committee member** Buenos Aires, Argentina
Master Thesis. Student: Federico Rabinovich. Dissertation: *"Cluster-Based Training Methods for Convolutional Layers in Neural Networks"*. FCEN, UBA.
- 2022 **PhD. examining committee member** Tandil, Argentina
Student: Delfina Braggio. Dissertation: *"Contributions to the Study of the Sensitivity of Voxel-Based Morphometry"*. FCEX, UNICEN.
- 2022 **Examining committee member** Buenos Aires, Argentina
Student: Gonzalo Ruarte. Dissertation: *"Optimization of a Visual Search Model: Adaptations and Improvements for cIBS"*. FCEN, UBA.
- 2021 **Examining committee member** Buenos Aires, Argentina
Student: Fermín Travi. Dissertation: *"Computational Models of Human Visual Search in Natural Scenes: Comparison of Models and Reference Datasets"*. FCEN, UBA.
- 2021 **PhD. examining committee member** Troyes, France
Student: Martin Palazzo. Dissertation: *"Dimensionality reduction of biomedical tumor profiles: a machine learning approach"*. UTT, France.
- 2021 **Examining committee member** Buenos Aires, Argentina
Student: Gaston Mazzei. Dissertation: *"Simplified Access to Neural Networks for Physics Problems and Others"*. FCEN, UBA.
- 2020 **Examining committee member** Buenos Aires, Argentina
Master Thesis. Student: Eduardo Montero. Dissertation: *"Visual Analytics in the Discovery of Knowledge of Non-Communicable Chronic Diseases in Ecuador"*. FCEN, UBA.
- 2019 **Examining committee member** Buenos Aires, Argentina
Student: Julián Bayardo. Dissertation: *"Efficient Approximation of the Non-Convex Capsule for Surface Reconstruction"*. FCEN, UBA.

International Conferences

- 2023 **International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)** Vancouver, Canada
VesselVAE: Recursive Variational Autoencoders for 3D Blood Vessel Synthesis
- 2023 **International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)** Vancouver, Canada
Learning normal asymmetry representations for homologous brain structures
- 2021 **Eurographics** Viena, Austria
SketchZooms: Deep Multi-view Descriptors for Matching Line Drawings
- 2021 **Toronto Geometry Colloquium** Toronto, Canada
Learning to generate realistic 3D bone micro-structure with controllable parameters
- 2020 **International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)** Lima, Perú
Generative Modelling of 3D in-silico Spongiosa with Controllable Micro-Structural Parameters
- 2019 **Computer Assisted Radiology and Surgery (CARS)** Rennes, France
Improving realism in patient-specific abdominal Ultrasound simulation using CycleGANs
- 2018 **ACM SIGGRAPH** Vancouver, Canada
CoreCavity: Interactive Shell Decomposition for Fabrication with Two-Piece Rigid Molds.
- 2017 **Visual Computing / Graphics and CAD Joint Symposium 2017** Tokyo, Japan
Interactive Decomposition for Fabrication with Two-Piece Permanent Molds.
- 2015 **ACM SIGGRAPH ASIA** Kobe, Japan
WrapIt: Computer-assisted Crafting of Wire Wrapped Jewelry.
Association for Computing Machinery (ACM).
- 2015 **ACM SIGGRAPH** Los Angeles, CA
Bendfields: Regularized Curvature Fields from Rough Concept Sketches.
Association for Computing Machinery (ACM).
- 2014 **Eurographics Student Volunteer** Strasbourg, France
European Association for Computer Graphics.
- 2013 **Symposium on User Interface Software and Technology** St Andrews, UK
The Drawing Assistant: Automated Drawing Guidance and Feedback from Photographs.
Association for Computing Machinery (ACM).
- 2013 **Conference on Human Factors in Computing Systems** Paris, France
Association for Computing Machinery (ACM).

Other Research Projects

- 2022 - 2023 **Development of Quantitative Analysis Software for 18F-FDG PET to Support the Diagnosis of Alzheimer's Disease in a Cohort of Latin American Patients**
Fundación Sadosky - Fleni - Conicet
Buenos Aires, Argentina
- 2019 - 2021 **Morphological Characterization of the Optic Nerve Head in Fundus Photographs Using Deep Learning**
PICT-2019-00070 - UNICEN
Grant: USD 5.700,00.
Tandil, Argentina
- 2018 - 2021 **Study and Modeling of the Dynamics of Complex Systems Based on Signal Analysis**
PID - Universidad Tecnológica Nacional
ASUTNBA0004729. Grant: USD 75.000,00.
Buenos Aires, Argentina
- 2016 - 2017 **Soft-bodied Intelligence for Manipulation (SOMA)**
European Union's Horizon 2020 Research and Innovation Programme.
Instituciones Participantes: *Università di Pisa - Fondazione Istituto Italiano di Tecnologia, Deutsches Zentrum fuer Luft – Und Raumfahrt Ev, Institute of Science and Technology Austria, The Walt Disney Company (Switzerland), Ocado Innovation Limited.*
ID 645599. Grant: 7.131.091,25 euros.
IST Austria
- 2012 - 2015 **Dessin Réaliste Assisté par Ordinateur (DRAO)**
The French National Research Agency (ANR)
ANR-12-JS02-0003. ANR Grant: 152.693 euros.
Inria Sophia Antipolis, France