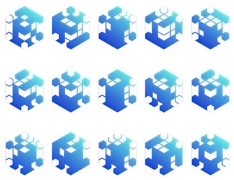

Emmanuel Iarussi

Computer Graphics - Interactive Design - AI

Personal

DNI: 33.514.117
CUIL: 20-33514117-3
Age: 34 - 12/01/1988

Address

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

Tel & Skype

(+54 11) 5169 7847
emmanueliarussi

Mail

emmanuel.iarussi@utdt.edu

Web

emmanueliarussi.github.io/

Interest Areas

CG ★★★★★
AI ★★★★★
Interaction ★★★★☆
Imaging ★★★★☆
Vision ★★★☆☆

Languages

Spanish ★★★★★
English ★★★★★
French ★★★★☆
Italian ★★☆☆☆

Since 2022 **Assistant Professor** — Buenos Aires, Argentina
Universidad Torcuato Di Tella

Since 2017 **Research Fellow** — Buenos Aires, Argentina
Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)

Education

Since 2021 **Public Communication of Science and Technology** — FCEN - UBA
In progress. Expected January 2022.

2016-2017 **Postdoctoral Fellow** — IST Austria
IST Austria - Digital Fabrication

2012 - 2015 **PhD. Computer Science** — INRIA & Université de Nice - France
Automatic processing of signal and images.
Thesis: *"Computer Drawing Tools for Assisting Learners, Hobbyists, and Professionals".*
Advisors: Adrien Bousseau, George Drettakis.

2006 - 2012 **Systems Engineer** — UNICEN - Buenos Aires - Argentina
Thesis: *"Autómatas de lattice-Boltzmann para modelos de iluminación difusa aplicados a la detección de texturas en imágenes digitales".*
Advisors: Alejandro Clausse, Virginia Cifuentes.

2006 - 2011 **Programmer Analyst** — UNICEN - Buenos Aires - Argentina

Publications

SketchZooms: Deep Multi-view Descriptors for Matching Line Drawings. Navarro, P., Orlando, J. I., Delrieux, C., **Iarussi, E**. *Computer Graphics Forum, 40(1), 410–423 (2021). ISSN:1467-8659 doi: 10.1111/cgf.14197*

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). doi: 10.21203/rs.3.rs-109542/v1*

Generative Modelling of 3D in-silico Spongiosa with Controllable Micro-Structural Parameters. Emmanuel Iarussi, Felix Thomsen, Claudio Delrieux. *International Conference on Medical Image Computing and Computer-Assisted Intervention (pp. 785-794) (2020)*.

Improving realism in patient-specific abdominal Ultrasound simulation using CycleGANs. Santiago Vitale, José Ignacio Orlando, **Emmanuel Iarussi**, Ignacio Larrabide. *International Journal of Computer Assisted Radiology and Surgery, 1-10 (2019)*.

FlexMaps: Computational Design of Flat Flexible Shells for Shaping 3D Objects. Luigi Malomo, Jesús Pérez, **Emmanuel Iarussi**, Nico Pietroni, Eder Miguel, Paolo Cignoni, Bernd Bickel. *ACM Transactions on Graphics (SIGGRAPH Asia) 37.6 (2018)*.

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)*.

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

BendFields: Regularized Curvature Fields from Rough Concept Sketches. Emmanuel Iarussi, David Bommes, and Adrien Bousseau. *ACM Transactions on Graphics (TOG) 34.3 (2015): 24*.

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.*.

Research Funding

2021 - 2023 **Project PIP / ID: PIP 2021-2023 GI - 11220200102981CO** UTN FRBA - UNS
Diagnóstico preciso de la osteoporosis mediante modelos generativos antagónicos a partir de imágenes TC corporales de rutina
Grant: $ 853.000,00.

2019 - 2020 **Salesforce AI Research Grant** UTN FRBA - UNS
Bone-GAN: Towards an accurate diagnosis of osteoporosis from routine body CTs
Grant: U$D 50.000,00.

2019 - 2020 **Project PICT-Joven / ID: PICT-2018-04517** UTN FRBA
Detección de Correspondencias de Dominio Cruzado mediante Deep Learning.
Grant: $130.000,00.

2019 - 2020 **Project PDTSO UTN 782/19** UTN FRBA
OcularRA:. Realidad Aumentada para Asistencia a Conductores con Visión Mono Ocular.
Grant: $200.000,00.

2020 - 2022 **Project PID UTN / ID: SIUTNBA0005534** UTN FRBA
Redes Generativas para el Diseño 2D/3D Interactivo y Síntesis Multivista.
Grant: $644.225,68.

2019 - 2021 **Project PID UTN / ID: SIUTNBA0005139** UTN FRBA
CrossMatch: Detección de Correspondencias de Dominio Cruzado mediante Deep Learning.
Grant: $1.143.878,00.

2017 - 2018 **Nvidia Research Grant** UTN FRBA
Dense Cross-Domain Features for 2D/3D Matching using Deep Convolutional Networks.
Grant: U$D: 3.800,00.

Awards

2021 **Salesforce AI Research Grant** Salesforce
Bone-GAN: Towards an accurate diagnosis of osteoporosis from routine body CTs.
Link to official website.

2020 **Demetrios Prize 2020** Albert-Ludwigs University, Freiburg, Germany
Best Master's Thesis. International Master Program in Biomedical Sciences. Student: Gisela Pattarone.
Project: *Automatic Breast Cancer Cell Classification using Deep Convolutional Neural Networks.*

Teaching Experience

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

2018 - 2021 **JTP** FRBA-UTN
Position affected to scientific research tasks.
Secretaría de Ciencia, Tecnología e Innovación Productiva
Contact: Patricia Cibeira · **pcibeira**@frba.utn.edu.ar

2014 - 2015 **JTP** IUT, Université Côte d'Azur, Nice, France
Introduction à l'Interaction Homme-Machine
Systèmes d'informations et Gestion de Données
See attached certification below.

2010 - 2011 **ATP2** UNICEN
Computer Architecture
Ingeniería en Sistemas
Professor: Elias Todorovich · **etodorov**@exa.unicen.edu.ar

2009 - 2011 **ATP2** UNICEN
Software Development Methodologies.
Ingeniería en Sistemas
Professor: Claudia Marcos · **cmarcos**@exa.unicen.edu.ar

Teaching Experience (Postgraduate)

2017 - 2022 **Fundamentals of Computer Graphics** — UTN FRBA
Doctorado en Ingeniería, mención Procesamiento de Señales e Imágenes.
Contact: Ricardo Armentano · **armen**@frba.utn.edu.ar

2017 - 2022 **Information Visualization** — FCEN-UBA
Maestría en Explotación de Datos y Descubrimiento del Conocimiento.
Contact: Marcelo Soria · **soria**@agro.uba.ar

2020 **Graphics Representation and Data Visualization** — UNICEN
Diplomatura Universitaria en Inteligencia Artificial.
Contact: Andrés Diaz-Pace · **adiazpace**@gmail.com

2020 **Machine Learning** — UNPA
Maestría en Informática y Sistemas.
Contact: Claudio Delrieux · **cad**@uns.edu.ar

2018 - 2019 **Scientific Communication** — UTN FRBA
Master en Optimización y Seguridad de Sistemas.
Contact: Carolina Rodrigo · **crodrigo**@frba.utn.edu.ar

2019 **Information Visualization** — UTN FRP
Maestría en Minería de Datos.
Contact: Ana Silvia Haedo · **anasicorreo**@outlook.com

Other Short Courses and Trainings

2019 **CreativeIA: Generative Adversarial Networks in PyTorch.** — UNS
Lecturer. Creative AI tools training course for UNS teachers and researchers.

2019 **CreativeIA: Generative Adversarial Networks in PyTorch.** — UNSA
Lecturer. 48 JAIIO workshop course.

2017 **Visualization Techniques for Big Data** — UBA
Lecturer. Visualization training course for teachers during the *CitepLab: Big Data* workshop.

Public Communication of Science

2020 **TV interview - Todo tiene un porqué** — TV Pública

2019 **Invited speaker** — ClusterAI - Buenos Aires

2019 **Columnist** — Protón - FiloNews

2018 **Math for Instagram Filters** — Feria INNOVA - BA Ciencia

2017 **Laboratorio de Videojuegos** — Centro Cultural de la Ciencia (C3)

2017 **Game Map Modeling** — Centro Cultural de la Ciencia (C3)

Students

In progress **Gaston Vilches** UNS
PhD Scolarship co-advisor (CONICET). Started 2021.
Project: *Análisis avanzado de imágenes para asistencia al modelado geométrico 3D*.

In progress **Paula Feldman** UNS
PhD Thesis co-advisor. Started 2021.
Project: *Modelado generativo y síntesis de estructuras anatómicas vasculares*.

In progress **Miguel Fainstein** FCEN - UBA
Master Thesis advisor. Started 2022.
Project: *Modelos generativos en salud*.

2021 - 2022 **Cristian Galli** FCEN - UBA
Master Thesis advisor.
Project: *Estrategias de muestreo 3D para el aprendizaje profundo de superficies implícitas*.

2020 - 2021 **Daniel Bauer** UNC
Master Thesis advisor.
Proyecto: *Implementación de un motor de rendering no-fotorrealista en python*.

2020 - 2021 **Francisco Iarussi** UNICEN
Engineering thesis. Advisors: Prof. Dr. Ignacio Larrabide, Dr. Emmanuel Iarussi.
Project: *Caracterización de asimetrías en hipocampos usando técnicas de inteligencia artificial*.

2020 - 2021 **Leonardo Maestri** UTN FRBA
EVC-CIN scholarship advisor.
Project: *CrossMatch: detección de correspondencias de dominio cruzado mediante deep learning*.

2019 - 2020 **Gisela Pattarone** FFyB - UBA
Master thesis. Advisors: Prof. Dr. Joschka Bödecker, Emmanuel Iarussi.
Project: *Automatic breast cancer cell classification using deep convolutional neural networks*.

2017 - 2020 **Pablo Navarro** UTN FRBA
Internship advisor.
Project: *Dense cross-domain features for 2D-3D matching using deep convolutional networks*.

Scholarships

2012-2015 **Doctoral Scholarship** Agence Nationale de la Recherche, France
Computer Assisted Realistic Drawing.
Advisors: Adrien Bousseau & George Drettakis.

2014 **Internship ADOBE Research** San Francisco, CA
Computer-Assisted Crafting of Wire Wrapped Jewelry.
Advisor: Wilmot Li.

2011 **Scientific training scholarship BENTR10** Pladema - UNICEN
Detección de Texturas en Imágenes Digitales.
Comisión de Investigaciones Científicas
Advisors: Alejandro Clausse & María Virginia Cifuentes.

Other Activities

Since 2018 **PhD. Committee member** UTN FRBA
Doctorado en Ingeniería, mención Procesamiento de Señales e Imágenes.

2011 **Academic Council student member** UNICEN
Facultad de Ciencias Exactas.

2011 **Computing Department student member** UNICEN
Facultad de Ciencias Exactas.

Examining Committee

2022 **Examining committee member** FCEN - UBA
Student: Gonzalo Ruarte. Dissertation: *"Optimización de un modelo de búsqueda visual: Adaptaciones y mejoras para cIBS"*.

2021 **Examining committee member** FCEN - UBA
Student: Fermín Travi. Dissertation: *"Modelos computacionales de búsqueda visual humana en escenas naturales: comparación de modelos y conjuntos de datos de referencia"*.

2021 **PhD. examining committee member** UTN (Argentina) - UTT (France)
Student: Martin Palazzo. Dissertation: *"'Dimensionality reduction of biomedical tumor profiles: a machine learning approach"*.

2021 **Examining committee member** FCEN - UBA
Student: Gaston Mazzei. Dissertation: *"Acceso simplificado a redes neuronales para problemas de física y otros "*.

2020 **Examining committee member** FCEN - UBA
Master Thesis. Student: Eduardo Montero. Dissertation: *"Analíticos Visuales en el Descubrimiento de Conocimiento de las Enfermedades Crónicas no Transmisibles en el Ecuador"*.

2019 **Examining committee member** FCEN - UBA
Student: Julián Bayardo. Dissertation: *"Aproximación Eficiente de la Capsula No-Convexa para Reconstrucción de Superficies"*.

International Conferences

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).

National Publications (Argentina)

Método de Lattice-Boltzmann para segmentación de texturas de imágenes Cifuentes, V., Iarussi, E., Clausse, A. *Asociación Argentina de Mecánica Computacional, Volumen XXXI, 3027- 3036. Ed. Alberto Cardona, Paul H. Kohan, Ricardo D.Quinteros, Mario A. Storti. Noviembre 2012. ISSN: 1666-6070.*

Modelo de iluminación en medios difusos basado en autómatas de lattice-Boltzmann para la detección de texturas en imágenes digitales Iarussi, E., Cifentes, V., Clausse, A. *Asociación Argentina de Mecánica Computacional, Volumen XXX. Ed. Möller, O., Signorelli, J., Storti, M. Noviembre 2011. ISSN: 1666-6070.*

Implementación de una Arquitectura de Microprocesador didáctica en VHDL Torres C.L., Frade M.P., Iarussi E. *39 JAIIO. Córdoba, Argentina, 100-112. Ed. Alvaro Ruiz de Mendarozqueta, Marcelo Martin Marciszack, Mario A. Groppo. 2011. ISSN: 1850-2946.*

Pathfinding utilizando Algoritmos de Hormigas, Aplicado a laberintos 3D Iarussi E., Pareyra A. *38 JAIIO. Mar del Plata. Argentina, 447-458. Ed. Silvia Castro, Javier Orozco. ISSN: 1850-2946.*

Other Research Projects

2019 - 2021 **CANOA: Caracterización morfológica de la cabeza del nervio óptico en fotografías de fondo de ojo mediante aprendizaje profundo** UNICEN
PICT-2019-00070
Grant: 228.000,00 pesos.

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2018 - 2021 **Estudio y Modelado de la Dinámica de Sistemas Complejos en Base al Análisis de Señales** UTN
PID Universidad Tecnológica Nacional
ASUTNBA0004729. Grant: 3.692.200,00 pesos.

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2016 - 2017 **Soft-bodied Intelligence for Manipulation (SOMA)** IST Austria
European Union's Horizon 2020 Research and Innovation Programme.
Instituciones Participantes: *Universitá 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.

2012 - 2015 **Dessin Réaliste Assisté par Ordinateur (DRAO)** Inria Sophia Antipolis, France
The French National Research Agency (ANR)
ANR-12-JS02-0003. ANR Grant: 152.693 euros.