



Francisco Brilhante Fernandes

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📍 **Home:** Coimbra (Portugal)

WORK EXPERIENCE

Research Fellowship CISUC - Generative Modelling

CISUC - Centre for Informatics and Systems of the University of Coimbra [01/12/2022 – 31/07/2023]

City: Coimbra

Country: Portugal

Survey of the current state-of-the-art systems for the automatic generation of new typefaces.

Compilation of data relevant to the generation of new fonts.

Replication of results and improvements in state-of-the-art systems.

Development of one of the first diffusion models specialized in font generation.

Design and development of a web application for typeface design aimed at designers and the general public, encompassing all the generative models developed during the research.

This work was done as part of my master's thesis, completed with a grade of 18.

Summer internship UC/CNC

CNC - Centre for Neuroscience and Cell Biology [27/06/2022 – 31/07/2022]

City: Coimbra

Country: Portugal

Planning, design, and development of a web application to support access to a database of research entities in the Portuguese innovation ecosystem.

Cleaning and pre-processing of existing data.

Documentation writing, including user manual guide, data modeling specification, installation guide, etc.

Modern web application aimed at the B2B (business to business) market.

Research Fellowship CISUC (Scientific Initiation Grant) - Generative Adversarial Networks

CISUC - Centre for Informatics and Systems of the University of Coimbra [14/12/2020 – 14/08/2021]

City: Coimbra

Country: Portugal

Research into indicators and methods for evaluating and comparing the performance of GANs

Study of the metrics currently used to assess the quality of the data produced by GAN models.

Analysis of current implementations in light of the set of metrics discussed (FID, Mode Score, Likeness Score, Precision/Recall, etc.).

Creation of a new indicator capable of carrying out a more robust evaluation of artificial images generated by neural networks.

This project culminated in the review and presentation of a conference paper "*Evaluating GANs for Dataset Augmentation*" at RECAPD 2021 (Annual Portuguese Conference in the field of Pattern Recognition).

Application of current implementations and construction of new GAN models

This work involved generating new smoke and fire images using neural networks in order to extend a pre-existing dataset.

The new training dataset was intended to improve the performance of an existing classification model for forest fire images in real-time scenarios.

EDUCATION AND TRAINING

Master's Degree in Computer Engineering

Faculty of Sciences and Technology of the University of Coimbra [01/09/2021 – 31/07/2023]

Address: Rua Sílvio Lima, Pólo II da Universidade de Coimbra 3030-790 Coimbra Portugal, (Portugal)

Website: www.uc.pt/en/fctuc

Field(s) of study: Intelligent Systems

Final grade: 16.4

Thesis: Generative Modeling for Automated Type Design

Bachelor's Degree in Computer Engineering

Faculty of Sciences and Technology of the University of Coimbra [11/09/2018 – 28/06/2021]

Address: Rua Sílvio Lima, Pólo II da Universidade de Coimbra, 3030-790 Coimbra (Portugal)

Website: www.uc.pt/en/fctuc

Final grade: 15.04

High School

Escola Secundária Infanta Dona Maria [01/09/2015 – 01/07/2018]

Address: R. Infanta Dona Maria, Coimbra, 3030-036 Coimbra (Portugal)

Website: www.esidm.pt

Final grade: 16.1

LANGUAGE SKILLS

Mother tongue(s): **Portuguese**

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Languages/Frameworks/Tools

Javascript/HTML/CSS / ReactJS / NextJS / Android (Java) / Django / JavaBeans / Spring Framework / PostgreSQL / Java Beans / PgSQL / MATLAB / C / Python / R / C# / Git / C++ / Outsystems / Java

Machine Learning

Generative Adversarial Networks / Autoencoders / Evolutionary Algorithms / Genetic Programming / LSTM networks / Classification Neural Network / Convolutional Neural Network / Diffusion Models / Tensorflow / PyTorch

HOBBIES AND INTERESTS

Track and Field (2014-2018)

District Champion in the Long Jump, 100m and 100m Hurdles.

Participation in National and Youth Olympic Championships in the Long Jump, 100m, 100m Barriers, and 400m Relay.

3D Modeling/VFX - Blender