

Francisco Manuel Gonçalves Coelho
CURRICULUM VITÆ

May 11, 2023



Born July 30, 1968 in Lisbon, Portugal,
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Interests Artificial intelligence, inductive logic programming,
logic and machine learning.

Academic Education

Doctor in Informatics **2006**

Research for the degree of Doctor in Informatics, on artificial intelligence and agent deliberation, advised by Professor [Helder Coelho](#).

Thesis: [Emergência e Colapso de Poder](#)

Institution: [Universidade de Lisboa](#), Lisboa, Portugal

Grade: Very good, with praise and distinction, unanimously.

Master in Mathematics, specialty Algebra **1997**

Work on algebra and geometry, computability and decidability, and Hilbert's 10th problem, advised by Professor Augusto Franco de Oliveira and Professor [José Félix da Costa](#).

Thesis: Polinómios, Réguas e Compassos - Problemas de Decidibilidade e Computabilidade

Institution: [Universidade de Lisboa](#), Lisboa, Portugal

Grade: Very good.

Graduated in Mathematics **1994**

Institution: [Universidade de Lisboa](#), Lisboa, Portugal

Grade: 13 values (out of 20).

Other Formation

Using the OBLIVION Supercomputer 2022

Institution: High Performance Computing Centre — University Of Évora

Instructor: Miguel Avillez

Probabilistic Graphical Models 2012

Institution: Stanford University, *via* Coursera

Instructor: Daphne Koller

Grade: Complete, with distinction

Control of Mobile Robots 2013

Institution: Georgia Institute of Technology, *via* Coursera

Instrutores: Magnus Egerstedt & Nelson Baker

Grade: Complete, with distinction

Computing for Data Analysis 2013

Institution: Johns Hopkins University, *via* Coursera

Instructor: Roger D. Peng

Grade: Complete, with distinction

Machine Learning 2013

Institution: Stanford University, *via* Coursera

Instructor: Andrew Ng

Grade: Complete

Data Analysis 2013

Institution: Johns Hopkins University, *via* Coursera

Instructor: Jeffrey Leek

Grade: Complete

Data Science: Natural Language Processing 2019

Institution: Udemy

Grade: Complete

Deep Learning Prerequisites: Logistic Regression in python 2019

Institution: Udemý

Grade: Complete

Accredited Instructor

Institution: Conselho Científico-Pedagógico da Formação Contínua

Referência: CCPFC/RFO-22351/07

Contents

1	Research	1
1.1	Scientific and Technical Production	1
1.2	Participation and Coordination of Research Projects	5
1.3	Other Technical or Scientific Activities	6
2	Teaching and Pedagogic Activities	8
2.1	Teaching	8
2.2	Student Adviser	12
2.3	Publication of Books with ISBN and other Pedagogical Texts	15
2.4	Pedagogical Innovation	16
3	Knowledge Transfer	18
3.1	Training Actions	18
4	University Management	19

1 Research

1.1 Scientific and Technical Production

Invited Talks in Scientific Meetings

- Autómatos Quânticos, Instituto Superior de Agronomia June 2000
- Autómatos Quânticos, *Seminário Conjunto CIMA-DMat*, Universidade de Évora June 2000
- Quantum Grammars, *Seminário de Lógica Matemática*, Instituto Superior Técnico May 2000
- Autómatos Quânticos, *Seminário de Lógica Matemática*, Instituto Superior Técnico January 2000
- Computação Geométrica, *Seminário de Lógica Matemática*, Faculdade de Ciências da Universidade de Lisboa
- O Teorema de Matiyasevich II, *Seminário de Lógica Matemática*, Faculdade de Ciências da Universidade de Lisboa 1997
- O Teorema de Matiyasevich I, *Seminário de Lógica Matemática*, Faculdade de Ciências da Universidade de Lisboa 1997

Editorial and Review Activities in Scientific Journals

- **Reviewer.** *Applied Soft Computing* December 2022 — present
- **Editor.** Caldeira, Carlos Pampulim, Coelho, Francisco, (Eds.), *Atas das Oitavas Jornadas de Informática da Universidade de Évora* 2018

Communications in International Conferences

- Digital Humanities with Julia — An Overview, *Programming and Data Infrastructure in Digital Humanities* 28 March 2023
- Rational Soft-power, *Arrábida Workshop on Power, Leadership and Complexity* 3 July 2012
- System Dynamics Through Individual Behavior Simulation, *Dynamical Systems in Biology*, Évora, Portugal 7 March 2008

- Meta-Agency and Individual Power, *International Mediterranean Modeling Multiconference - CMS 05*, Marseilles, France 20 – 22 October 2005
- An Agent Architecture to Handle Commitment, *International Mediterranean Modeling Multiconference - ESS 05*, Marseilles, France 20 – 22 October 2005
- An Agent Architecture to Handle Commitment, *International Conference on Intelligent Agent Technology*, Compiègne, France 19 – 22 September 2005
- Predictability for Autonomous Decision Support, *Multi-Agent Based Simulation*, The Fourth International Joint Conference on Autonomous Agents & Multi Agent Systems, Utrecht, Netherlands 25 July 2005
- Towards Individual Power Design, *EPIA 2003: Progress in Artificial Intelligence* 29 June 2003

Papers in Proceedings of International Conferences with Peer Review

Probabilistic perception revision in AgentS-peak(L) 2015

Authors Francisco Coelho e Vitor Nogueira

Journal PRIMA 2015: 613 — 621

Impact Factor not available

Citations 1

The euclid abstract machine: Trisection of the angle and the halting problem 2006

Authors Francisco Coelho, José Félix Costa e Jerzy Mycka

Journal Unconventional Computation: 195—206

Impact Factor not available

Citations 1

Predictability for Autonomous Decision Support 2005

Authors Francisco Coelho e Helder Coelho

Journal MABS 2005: 88—98

Impact Factor not available

Citations 2

Towards Individual Power Design 2003

Authors Francisco Coelho e Helder Coelho

Journal EPIA 2003: 366—378

Impact Factor not available

Citations 2

Papers in Indexed Scientific Journals

**On lattices from combinatorial game theory:
infinite case** 2021

Authors A. Carvalho, C. Santos, C. Dias, F. Coelho, J. Neto, R. Nowakowski, e S. Vinagre

Journal International Journal of Game Theory 50(3): 655—670

Impact Factor 0,640

Citations 1

**A method for regularization of evolutionary
polynomial regression** 2017

Authors Francisco Coelho e João Neto

Journal Applied Soft Computing 59: 223—228

Impact Factor 8,263

Citations 9

**On lattices from combinatorial game theory.
Modularity and a representation theorem: Finite
case** 2014

Authors A. Carvalho, C. Santos, C. Dias, F. Coelho, J. Neto, R. Nowakowski, e S. Vinagre

Journal Theoretical Computer Science 527: 37—49

Impact Factor 0,827

Citations 1

**A recursive process related to a partizan variation
of wythoff** 2012

Authors A. Carvalho, C. P. Santos, C. L. Dias, F. Coelho, J. P. Neto, e S. Vinagre

Journal Integers 12

Impact Factor not available

Citations 1

Meta agency and individual power 2009

Authors Francisco Coelho e Helder Coelho
Journal Web Intelligence and Agent Systems 7: 333—346
Impact Factor not available
Citations 2

The Euclid Abstract Machine 2008

Authors Francisco Coelho, José Félix Costa e Jerzy Mycka
Journal International Journal of Unconventional Computing 4(3):
223—248
Impact Factor 1,844
Citations 6

Books and Book Chapters

A multi-agent model inspired on soft-power 2015

Authors Francisco Coelho
Journal *Power, Leadership and Complexity in memory of António Gouveia Portela*, IST Press
Impact Factor not available
Citations not available

Programs and Computer Systems

- [ALisP](#) is a programming language used to exemplify the syntactic analysis chapters of the course *Automata and Programming Languages* and bridge to forthcoming courses, such as *Compilers*.
- [mquestions](#), a Python library to write Moodle questions, using YAML and Markdown. *Author*
- [xchg](#), XSLT sheets to convert *ProbModelX* (`pgmx`) files of [OpenMarkov](#) to [XMLBIF](#). *Author*
- [Girald](#) is a *Beamer* visual theme following the identity image guidelines of Universidade de Évora. *Author*
- [TeseUE](#) is a \LaTeX class for PhD and MSc thesis in Universidade de Évora. *Author*

- [jard](#) bridges [YAdrone](#), a Java library for the [AR.Drone 2.0](#) to [Jason](#), a Java library for the BDI based [AgentSpeak\(L\)](#) deliberation process, in a JavaFX GUI. *Author*
- [Galaxy](#) is a system to evaluate the accuracy of perception correction in [AgentSpeak\(L\)](#) agents, using probabilistic methods. *Author*
- [Genetic Algorithms for Polynomial Regression](#), R code to find the best polynomial regression with genetic algorithms. *Co-author*
- [CGT Toys](#), a toolkit to explore ideas in combinatorial game theory. *Co-author*

1.2 Participation and Coordination of Research Projects

Coordination of Research Projects

[JuPy | High Level Languages on HPC](#) 2022

FCT Reference CPCA/A0/427668/2021

Role Investigador Responsável

Founding Fundação para a Ciência e Tecnologia

Call Concurso de Projetos de Computação Avançada (2^a edição)

Participation in Research Units

- [NOVALINCS](#) **Integrated Member** 2022 – present.
- [High Performance Computing Chair](#) 2021 – presente
 - Member of the Scientific team, Technical-Scientific board, *Work Package 1 (Awareness & Training)*, *Work Package 4, (Data Processing)*, *Work Package 5, (AI Research, Applications and Solutions)*, *Work Package 10 (Digital Humanities)*,
 - Coordinator of the *Programming in DHs* task of the *Work Package 10 (Digital Humanities)*
- [LISP, Laboratory of Informatics, Systems and Parallelism](#) 2014 – 2019
- [LaBMAg, Laboratório de Modelação de Agentes](#) 2001 – 2013

Peer Review Activities

- Member of the *Jury for evaluating applications for a Research Initiation Scholarship* within the scope of the multi-annual financing of the R&D unit with reference UIDP/04516/2020, financed by national funds through the FCT/MCTES.
- Member of the *Jury for evaluating applications for a Research Scholarship* within the research project “*O Desvendar da Pintura Mural de Almada Negreiros (1938-1956)*”, with reference PTDC/ART-HIST/1370/2020, financed by the Fundação para a Ciência e Tecnologia.

1.3 Other Technical or Scientific Activities

Participation in Event Organization

- **Session chair in international conferences.** [Session 2: Data Infrastructure and Data Processing — Programming and Data Infrastructure in Digital Humanities](#) 28 March 2023
- **Member of the Scientific and Organizing Committees in international conferences.** [Programming and Data Infrastructure in Digital Humanities](#) 27–29 March 2023
- **Head of Organizing, Scientific or Program Committees.**
 - [Maratona Inter-Universitária de Programação 2010](#) 16 October 2010
- **Member of Organizing, Scientific or Program Committees.**
 - [Recpad 2021](#) 5 November 2021
 - [Oitavas Jornadas de Informática da Universidade de Évora](#) 21 March 2018
 - [Quartas Jornadas de Informática da Universidade de Évora](#) 27–28 February 2014
 - [Segundas Jornadas de Informática da Universidade de Évora](#) 16 November 2011
 - [Maratona Inter-Universitária de Programação 2011](#) 22 September 2011

Communications at Scientific Divulcation Events

- *Fronteiras da Inteligência Artificial*, Invited Talk, Festival da Ciência'23, Universidade de Évora 19 April 2023

Visit to Other Scientific Institutions

- Visit to the *Czech Technical University* to deepen and develop proposals for cooperation between Universidade de Évora and CTU. scheduled to 19–23 June 2023
- Visit to the *Czech Technical University* to study, present and develop cooperation proposals between the University of Évora and CTU (Reference GD/10546/2023). 4–12 April 2023

2 Teaching and Pedagogic Activities

2.1 Teaching

Auxiliar Professor **2006 – present**

Position held in:

- [Universidade de Évora](#), Évora, Portugal
- [Universidade Nacional de Timor Lorosa'e](#), Dili, Timor Lorosa'e

Summary of roles and tasks:

- Classes for the graduation and master courses in *Computer Engineering* at the [Departamento de Informática](#) 2009 – Presente
- Classes for the graduation course in *Computer Engineering* at the [UNTIL](#) February 2010 – April 2010
- Classes for the graduation course in *Mathematics* at the [Departamento de Matemática](#) 2006 – 2008
- Other tasks at [Departamento de Informática](#) include: Deputy director of the department, member of the pedagogical board of the *Escola de Ciência e Tecnologia*, member of the department board, member of the course board.
- Other tasks at [Departamento de Matemática](#) include: member of the department board, member of the course board.

Assistant **1997 – 2006**

- Graduation classes at [Departamento de Matemática](#) of [Universidade de Évora](#), Évora, Portugal October 1997 – July 2006
- Graduation classes at [Escola Superior de Tecnologia e Gestão](#) of [Instituto Politécnico de Leiria](#), Leiria, Portugal February 1997 – September 1997

Teaching Assistant **1993 – 1996**

- Graduation classes at [Departamento de Informática](#) of [Faculdade de Ciências da Universidade de Lisboa](#) September 1994 – February 1996

- Graduation classes at (now extinct) *Departamento de Matemática* of *Instituto Superior de Agronomia, Universidade de Lisboa* (formerly *Universidade Técnica de Lisboa*), Lisboa, Portugal September 1993 – December 1993

Master Degree Courses

Desenho de Jogos	2013 – present
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 94% Teacher: 78% (2019)
Seminários	2013 – 2022
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 85% Teacher: 95% (2021)
Sistemas Computacionais de Apoio à Decisão	2008 – present
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 76% Teacher: 88% (2016)

Graduation Courses

Autómatos e Linguagens de Programação	2020 – present
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 84% Teacher: 92% (2021)
Lógica e Computação	2020 – present
<i>Role</i>	Coordinator; Classes TP
<i>Teaching hours</i>	T: n/d P: n/d PL: n/d TP: 30
<i>Inquire results</i>	Course: 86% Teacher: 96% (2021)
Computação Gráfica	2010 – present
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 81% Teacher: 89% (2021)

Projeto Integrado I	2013 – 2021
<i>Role</i>	Coordinator; Classes TP
<i>Teaching hours</i>	T: n/d P: n/d PL: n/d TP: 15
<i>Inquire results</i>	Course: 81% Teacher: 84% (2020)
Programação II	2016 – 2022
<i>Role</i>	Classes PL
<i>Teaching hours</i>	T: n/d P: n/d PL: 15 TP: n/d
<i>Inquire results</i>	Course: 82% Teacher: 80% (2020)
Linguagens Formais e Autômatos	2009 – 2020
<i>Role</i>	Coordinator; Classes T, TP
<i>Teaching hours</i>	T: 30 P: n/d PL: n/d TP: 30
<i>Inquire results</i>	Course: 86% Teacher: 94% (2018)
Inteligência Artificial	2018
<i>Role</i>	Classes PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 76% Teacher: 86% (2018)
Programação e Sistemas Inteligentes	2017
<i>Role</i>	Classes TP
<i>Teaching hours</i>	T: n/d P: n/d PL: n/d TP: 30
<i>Inquire results</i>	below five answers
Suportes e Tipologias de Informação	2014
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 58% Teacher: 64% (2020)
História e Informática	2011
<i>Role</i>	Coordinator; Classes TP
<i>Teaching hours</i>	T: n/d P: n/d PL: n/d TP: 45
<i>Inquire results</i>	below five answers
Programação	2007 – 2009
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 76% Teacher: 74% (2009)

Tópicos de Ferramentas Numéricas	2009
<i>Role</i>	Coordinator; Classes TP
<i>Teaching hours</i>	T: n/d P: n/d PL: n/d TP: 22
<i>Inquire results</i>	<i>below five answers</i>
Sistemas Dedutivos	2003 – 2009
<i>Role</i>	Classes T, P
<i>Teaching hours</i>	T: 45 P: 30 PL: n/d TP: n/d
<i>Inquire results</i>	Course: 56% Teacher: n/d (2009)
Teoria dos Números e Criptografia	2008
<i>Role</i>	Coordinator; Classes T, TP
<i>Teaching hours</i>	T: 30 P: n/d PL: n/d TP: 30
<i>Inquire results</i>	<i>below five answers</i>
Matemática Aplicada à Economia e à Gestão I	2007 – 2008
<i>Role</i>	Classes P
<i>Teaching hours</i>	T: 45 P: 30 PL: n/d TP: n/d
<i>Inquire results</i>	<i>below five answers</i>
Lógica Computacional	2003 – 2008
<i>Role</i>	Classes T, PL
<i>Teaching hours</i>	T: 30 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	Course: 56% Teacher: <i>não disponível</i> (2008)
Teoria da Computabilidade e Complexidade	2003 – 2008
<i>Role</i>	Coordinator; Classes T, PL
<i>Teaching hours</i>	T: 45 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	<i>below five answers</i>
Matemática I	2007
<i>Role</i>	Classes P
<i>Teaching hours</i>	T: 30 P: 60 PL: n/d TP: n/d
<i>Inquire results</i>	<i>not available</i>
Lógica e Fundamentos da Matemática	2006 – 2007
<i>Role</i>	Classes PL
<i>Teaching hours</i>	T: 45 P: n/d PL: 30 TP: n/d
<i>Inquire results</i>	<i>not available</i>

Informática I 2003 – 2006

Role Coordinator; Classes T, PL
Teaching hours T: 45 P: n/d PL: 30 TP: n/d
Inquire results not available

Álgebra Linear e Geometria Analítica 2003 – 2006

Role Coordinator; Classes T, PL
Teaching hours T: 30 P: n/d PL: 30 TP: n/d
Inquire results not available

Álgebra Linear e Geometria I 2003 – 2006

Role Coordinator; Classes T, PL
Teaching hours T: 45 P: n/d PL: 30 TP: n/d
Inquire results not available

International Teaching Activities

Universidade Nacional de Timor-Lorosa'e February 2010 – April 2010
Cooperation protocol between the UNTL and the *Fundação das Universidades Portuguesas* (FUP), to support the *Computer Engineering* graduation.

Sistemas Multimédia 2010

Role Coordinator; Classes TP
Teaching hours not available
Inquire results not available

Gestão de Sistemas Computacionais 2010

Role Coordinator; Classes TP
Teaching hours not available
Inquire results not available

2.2 Student Adviser

- **Vanderley Gondim** *PhD*
Title Utilização de aplicação móvel como estímulo ao
engajamento cívico nas cidades inteligentes
Conclusion Ongoing.

- **Alice Martins** *Introduction to Research Scholarship*
Title *Zugzwang* | Lógica e Inteligência Artificial
Conclusion Ongoing.
- **Francisco Rodrigues** *MSc*
Title *Recomendação em Superjogos*
Conclusion Ongoing.
- **Bruno Encarnação** *MSc*
Title *SetMindset*
Conclusion Ongoing.
- **Rita Sofia** *MSc*
Title *Online Learning and Dropout*
Conclusion 2022
- **Tony Chaveiro** *MSc*
Title *Realidade Virtual e e-Aprendizagem — Especificação de Perguntas de Escolha Múltipla*
Conclusion 2022
- **Carlos Figueiredo** *MSc*
Title *E-Learning* Imersivo — Atividades na Perspetiva da Primeira Pessoa
Conclusion 2022
- **Yushra Tehreem** *MSc*
Title *The X in Balance*
Conclusion 2016
- **Filipe Vieira** *MSc*
Title *Autómatos Recursivos*
Conclusion 2010
- **José Barroso** *Internship*
Title *Mobile Development (Android)*, Digital Works
Conclusion 2023
- **Ricardo Matono** *Internship*
Title *Mobile Development (iOS)*, Digital Works
Conclusion 2023

- **João Nabais** *Internship*
Title *Salesforce CRM, Capgemini*
Conclusion 2023
- **Pedro Claudino** *Internship*
Title *Outsystems B, KPMG*
Conclusion 2022
- **Adriano Martins** *Internship*
Title *Sapphirus KYC – Computer Vision, KPMG*
Conclusion 2022
- **Vasco Barnabé** *Internship*
Title *Mapify - Location Intelligence, Focus BC*
Conclusion 2021
- **Rui Roque** *Internship*
Title *Mapify - Location Intelligence, Focus BC*
Conclusion 2021
- **Sara Silva** *Internship*
Title *Introdução à Computação Quântica*
Conclusion 2009

Participation in Juries of Academic Examinations

- Cátia Dias, *Lattices related to Conway’s construction*, Universidade de Évora Vogal, PhD, 2013
- Rita Sofia, *Online Learning and Dropout*, Universidade de Évora Adviser, MSc, 2022
- Tony Chaveiro, *Realidade Virtual e e-Aprendizagem — Especificação de Perguntas de Escolha Múltipla*, Universidade de Évora Adviser, MSc, 2022
- Carlos Figueiredo, *E-Learning Imersivo — Atividades na Perspetiva da Primeira Pessoa*, Universidade de Évora Adviser, MSc, 2022
- Yushra Tehreem, *The X in balance*, Universidade de Évora Adviser, MSc, 2016

- Domingos Martins, **Plataforma de gestão de culturas hidropónicas**, Universidade de Évora President of the Juri, MSc, 2014
- João Lobo, **EcoJukeBox**, Universidade de Lisboa Arguing, MSc, 2013
- Rui Deyllot, **Diplomacy — Base de dados de movimentos no controlo de províncias**, Universidade de Aveiro Arguing, MSc, 2010
- Mário Mourão, **Simplificação de processos com cartão de cidadão**, Universidade de Évora Vogal, MSc, 2010
- Filipe Vieira, **Autómatos recursivos**, Universidade de Évora Adviser, MSc, 2010
- Maria Godinho, **Introdução à Criptografia**, Licenciatura em Matemática, Universidade de Évora President, End of course work, 2007

2.3 Publication of Books with ISBN and other Pedagogical Texts

- Luís Bandeira, Francisco Coelho and Nuno Franco, *Introdução à Matemática - Álgebra, Análise e Otimização* LIDEL 2016 ISBN: 978-989-752-209-3
- Francisco Coelho and João Neto, *Teoria da Computação, Computabilidade e Complexidade* Escolar Editora, 2010 ISBN: 978-972-592-281-1
- Theoretical notes, exercises and examples for **Computação Gráfica**, of the Graduation in Computer Engineering at the Universidade de Évora.
- Theoretical notes, exercises and examples for **Autómatos e Linguagens de Programação**, of the Graduation in Computer Engineering at the Universidade de Évora.
- Theoretical notes, exercises and examples for **Lógica e Computação**, of the Graduation in Computer Engineering at the Universidade de Évora.

- Theoretical notes, exercises and examples for **Desenho de Jogos** (in english), of the MSc in Computer Engineering at the Universidade de Évora.

2.4 Pedagogical Innovation

Creation or Restructuring of Course Units

Desenho de Jogos, MSc in Computer Engineering, Universidade de Évora
Course Created

Learning Objectives. *This course is designed to challenge students, improving their collaboration skills (and providing some fun) while deepening their game design skills.*

Seminários, MSc in Computer Engineering, Universidade de Évora
Course Restructured

Learning Objectives. *To identify and analyze some of the main problems in the IT area, in terms of the labor market; Establish connections with companies in the area and learn about their R&D projects.*

Autómatos e Linguagens de Programação, Graduation in Computer Engineering, Universidade de Évora
Course Created

Learning Objectives. *Discuss finite state machines; Construct or Define a regular expression and a CFG to represent or an DFA to accept/generate a specified language; Convert between equivalent representations; Determining a language's place in Chomsky's hierarchy, major problems in syntax definitions; Use formal grammars to specify the syntax of languages, declarative tools to generate parsers and scanners; Define a formal semantics and an abstract syntax tree for a small language; Explain how programs that process other programs treat other programs and the advantages of having representations of programs that are not strings of source code. Write a program to process some code representation.*

Learning Objectives. *Identify uses of digital presentations; Explain discrete sampling, the limits of human perception, the problem of light transport, texture mapping, sampling and anti-aliasing; Describe the differences between image compression techniques, color models, the basic graphics pipeline, the basic process of producing continuous motion and representations of rotations; Compare progressive and regressive construction; Represent curves and surfaces, mesh representation and fractal models or terrains; Build SGC models; Calculate two-dimensional and three-dimensional points applying affine transformations and three-dimensional coordinate systems and the location and orientation using forward and backward kinematics; Implement transform, clipping, spline interpolation, and display operations in 3D models.*

Learning Objectives. *Represent informal language logical statements in propositional and predicate logical expressions; Apply formal methods of propositional and predicate logic, the rules of inference and formal logical proofs and/or informal but rigorous logical reasoning to real problems; Describe how symbolic logic can be used to model real-life situations or applications, the strengths and limitations of propositional and predicate logic, and the parallels between mathematical/structural induction ideas and recursion; Identify, describe and correctly apply each of the demonstration techniques in building a solid argument for the best type of proof for a given problem.*

Learning Objectives. *Provide students with a first experience of developing an interdisciplinary project.*

3 Knowledge Transfer

3.1 Training Actions

Programming in Julia for Digital Humanities

October 2023

Role Course director; Classes
Teaching hours 14 Contact hours; 38 Individual work
Inquire results not applicable

This course is part of the training and dissemination activities of the *High Performance Computing Centre* and the HPC Chair and is sponsored by the following entities:

- EuroCC (European Commission, EuroHPC JU)
- Foundation for Science & Technology (Portugal)

i-Days

10 November 2021

Role Mentor
Teaching hours not applicable
Inquire results not applicable

Organization: [EIT-Health](#); StartUB!C (Universidad de Barcelona);
Universidade de Évora

Introdução ao \LaTeX

Role Course director; Classes
Teaching hours PL: 8
Inquire results not applicable

This course is aimed at PhD students who intend or need to use \LaTeX for the composition of documents, from simple letters to monographs, passing through presentations, exams and scientific articles.

Utilização avançada do *Moodle* em contextos de ensino à distância

Role Theoretical-Practical Classes
Teaching hours not applicable
Inquire results not applicable

To know and master advanced features of Moodle; Ability to use Moodle in distance learning contexts; Develop the ability to choose the most appropriate methods taking into account the profile of trainees and educational content.

4 University Management

- Deputy of the Director of the **Conselho do Departamento de Informática**, Universidade de Évora 2023 – present
- Member of the **Comissão de Curso do Doutoramento em Informática**, Universidade de Évora 2022 – present
- Member of the **Conselho Pedagógico da Escola de Ciências e Tecnologia**, Universidade de Évora 2019 – 2023
- Deputy of the Director of the **Conselho do Departamento de Informática**, Universidade de Évora 2011 – 2012
- Member of the **Comissão de Curso da Licenciatura em Engenharia Informática**, Universidade de Évora 2010 – 2012
- Member of the **Conselho do Departamento de Informática**, Universidade de Évora 2008 – present
- Member of the **Comissão do Curso Ensino de Matemática**, Universidade de Évora 2006 – 2008
- Member of the **Conselho Científico da Área Departamental de Ciências Exatas**, Universidade de Évora 2006 – 2007
- Member of the **Comissão Científica do Departamento de Matemática**, Universidade de Évora 2006 – 2007
- Member of the **Conselho de Departamento do Departamento de Matemática**, Universidade de Évora 2002 – 2007