Department of Information and Communication Technologies

Welcome session PhD program October 16th 2017

@dtic_upf
Outline

- Department of Information and Communication Technologies (DTIC)
- PhD program
- Research seminars
- Teaching assistance
- International DTIC
- Welcome
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• Department of Information and Communication Technologies (DTIC)
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Key DTIC values

Global

Interdisciplinary

Wide range of areas of application and research around ICT
Education

**Undergraduate Programs**

• Bachelor's degree in Biomedical Engineering
• Bachelor's degree in Computer Engineering
• Bachelor's degree in Telecommunications Network Engineering
• Bachelor's degree in Audiovisual Systems Engineering
• Bachelor’s degree in Mathematical Engineering on Data Science (This year)
Postgraduate Education

Research Master’s Degrees

Master in Sound and Music Computing

Master in Cognitive Systems and Interactive Media

Master in Intelligent Interactive Systems

Master in Brain and Cognition

Master in Computer Vision

Master in Wireless Communications

Master in Computational Biomedical engineering

PhD Program in Information and Communication Technologies

https://www.youtube.com/watch?v=FjAuggflTVE
Research areas

- MULTIMEDIA TECHNOLOGIES
- COGNITIVE AND INTELLIGENT SYSTEMS
- NETWORKS AND COMMUNICATION
- COMPUTATIONAL BIOLOGY AND BIOMEDICAL SYSTEMS
  (incl. BRAIN AND COGNITION)
Research groups

**COGNITIVE AND INTELLIGENT SYSTEMS**
- Cognition, Computation and Robotics
- Artificial Intelligence and Theoretical Computer Science
- Natural Language Processing
- Ubiquitous Computing
- Information Retrieval and Data Mining
- Cognitive Multimedia Technologies

**MULTIMEDIA TECHNOLOGIES**
- Image Processing and Computer Vision
- Image Processing for Enhanced Cinematography
- Music Technology Group (Audio and Signal Processing, Music and Machine Learning, Music Information Research, Music and Multimodal Interaction)
- Human-Computer Interaction, Graphics and Educational Technologies

**COMMUNICATIONS AND NETWORKS**
- Network Technologies and Strategies
- Wireless Communications
- Wireless Networking
- Information Theory and Coding

**COMPUTATIONAL BIOLOGY AND BIOMEDICAL SYSTEMS**
- Computational Neuroscience
- Analysis of Biomedical Data
- Non-linear signal analysis
- Instrumentation and Biomedical Electronics
- Simulation, Imaging and Modelling for Biomedical Systems

**BRAIN AND COGNITION**
- Language and Comparative Cognition
- Multisensory Research
- Speech Acquisition, Perception, Production
- Reasoning and Infant Cognition

[https://www.upf.edu/web/etic/research-groups](https://www.upf.edu/web/etic/research-groups)
Key facts

People
• Tenured Faculty: 44 (*)
• > 250 full-time research staff, > 40% international
• Undergraduate Students: 888
• Master and Ph.D. Students: 340, > 60% international

(*) previous positions: Stanford, Cambridge, IBM Watson Research, Bell Labs, New York University, ETH Zürich, Univ. College London, Minnesota University, etc

Research
• Research incomes: 15.6 M€ / year
• 67 FP7 projects participated and coordinated by 26 staff members (> 60% UPF EU funds) including 15 prestigious ERC Grants, the Human Brain Project
• Absolute leader in Spain, > 5% of all the funds obtained by Spanish Universities, Maria de Maeztu Strategic Program in Data-Driven Knowledge Extraction.
• Consolidated scientific productivity ~200 articles/year, > 75% Q1 international journals
• 50% scientific papers and articles with at least one international collaborator
External Advisory Board

- **Prof. Elisa Bertino** - Professor at the Department of Computer Science, Purdue University, Director of the Cyber Center (Discovery Park) and Research Director of CERIAS
- **PhD. Ioannis Maghiros** - Head of Information Society Unit. Institute for Prospective Technological Studies. **DG JRC - European Commission**
- **Prof. Alison Noble** - Technikos Professor of Biomedical Engineering and Director of Institute of Biomedical Engineering. **University of Oxford**
- **PhD. Nuria Oliver** - Scientific Director for Data Mining, User Modeling, Mobile HCI & Multimedia. **Telefónica R&D**
- **PhD. Antonio Torralba** - Associate Professor (MIT). Computer Science and Artificial Intelligence Laboratory. Dept. of Electrical Engineering and Computer Science. **Massachusetts Institute of Technology**
- **Prof. Shimon Ullman** - Samy and Ruth Cohn Professor of Computer Science. Department of Computer Science And Applied Mathematics **Weizmann Institute of Science**
- **Prof. Moshe Vardi** - Director of the Ken Kennedy Institute for Information Technology
- **PhD. Robert Zatorre** - International Laboratory for Brain, Music and Sound Research (BRAMS), BRAMS Co-Director, Professor, Dept. of Neurology and Neurosurgery. **McGill University**
Industry relation

A Department well connected internationally (selected)

with strong local links (selected)
Entrepreneurship

Incubation spaces and support to entrepreneurs

Spin-offs & Start ups
Events organized by DTIC

- **11th European Summer School in Information Retrieval (ESSIR 2017)**
  September 4th-8th
- **5th Barcelona Summer School on Bilingualism and Multilingualism (BSBM), Sept 12-15, 2017**
- **Barcelona cognition, brain and technology summer school**
- **VPH Summer School May, 22nd – May, 26th, 2017**
- **more..**
Events in UPF and outside
Student-driven activities

Deep Learning Study Group

https://portal.upf.edu/web/mdm-dtic/deep-learning
Contact aurelio.ruiz@upf.edu / ramon.nogueira@upf.edu to join the distribution list and info

Medical Images 3D Printing Course

http://medmake.wix.com/medmake

Women in ICT and research

https://portal.upf.edu/web/mdm-dtic/gender-and-ict
Gender & Science Journal Club
feminist.jc.upf@gmail.com

New distribution list
https://groups.google.com/a/llista.upf.edu/forum/#!forum/woman.etic
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Academic coordinator: emilia.gomez@upf.edu
Administrative coordinator: lydia.garcia@upf.edu
PhD alumni

X. Amatriain (PhD 2004), VP of Engineering at Quora (Los Gatos, CA) – prev. Research Director at Netflix

Luz Rello (PhD 2014), now at Carnegie Mellon, Ashoka Fellow and Co-Founder Change Dyslexia

M. Signorini (PhD 2015), now at Nokia Bell Labs, Security Research Enginner

Luca Chiarandini (PhD 2014), now at YouTube Zurich

Óscar Celma, (PhD 2008), Director of Research at Pandora (Oakland, CA)

Joan Serrà (PhD 2011), Telefónica Research, Barcelona

Japan Institute of Invention and Innovation, National Commendation for Invention 2013

J. Bonada (PhD 2009), DTIC-UPF, co-founder of VoctroLabs Systems

BBVA Innova MX Challenge 2014, Innova Big Data 2013 Europeana Hack4Europe, Sonar Award, etc

Oscar Celma, (PhD 2008), Director of Research at Pandora (Oakland, CA)
35 new students joining the program
153 PhD students in the DTIC
200 thesis read

http://portal.upf.edu/web/etic/doctorat
PhD Program in ICTs: Structure

**Year 1:**
1. Research seminars
2. Preparation and defense of PhD proposal

**Year 2 and 3:**
3. Thesis work

**Year 4:**
4. Possible extension (+1 year)

http://portal.upf.edu/web/etic/doctorat
Show your ability to undertake original research at the PhD level:

1. Understand the state of the art: know related work and people in your topic.
2. Make scientific contributions to the SOTA: know your thesis, goals, plans, methods and expected contributions (and how to demonstrate it).
3. Show writing and communication skills for dissemination and publication.
Year 1: PhD Proposal

Procedure

• Jury made of 3 members (including your supervisor).
• Presentations scheduled in July (September).
• Send the jury a report 7-10 days before the presentation.
  • 15-20 min. presentation + 15 min. questions on the presentation and the written document.
• The jury has some time to deliberate.
• You will be provided with some feedback.
• If not pass → 6 months for a second evaluation.
Some administrative procedures to bear in mind

phdprogram.ict@upf.edu

- Yearly enrollment, **from 1 to 10 of October**.
- The Doctorate and Postgraduate Academic Committee (CAPiD) of the Department is the responsible of the approval of procedures like: request of change or joint supervisors, research stays, extensions for theses deposits and authorization of thesis deposits and defenses. **Monthly meetings.**
- Check the intranet with all the information about procedures:

  https://www.upf.edu/intranet/dtic
Keep updated your **Doctoral Activities Document** and **Research Plan**. Access through the menu of Campus Global (Academic Sec. Doctorate).
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Coordinator: aurelio.ruiz@upf.edu
Research Seminars

Coordinator: aurelio.ruiz@upf.edu
https://portal.upf.edu/web/etic/i_research_seminars

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<thead>
<tr>
<th>September</th>
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<tr>
<th>October 19th, 15:30</th>
<th>PhD Research Seminar</th>
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<tr>
<td></td>
<td>Introduction to PhD Seminars</td>
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<tr>
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<td>By Aurelio Ruiz Garcia</td>
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<th>October 26th, 15:30</th>
<th>PhD Research Seminar</th>
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<tr>
<td></td>
<td>Title: DKPro Core - With Reusable and Interoperable Components Towards Reproducible Experiments</td>
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<td>By Dr. Richard Eckart de Castilho</td>
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<td>Host: Jens Grivolla</td>
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Abstract

Vast amounts of information are stored in unstructured formats such as audio, video, or plain text. The field of Natural Language Processing (NLP) addresses this by providing not only methods but also many ready made tools to analyze text and to structure it in many ways ranging from simple segmentation to complex semantic analysis. However, it is often difficult to incorporate these tools into new experimental setups because the complexities of installation, configuration, data transformation and interoperability in general are often underestimated. This negatively affects the reproducibility of such experiments. This talk will give an introduction to doing NLP with DKPro Core and the DKPro eco-system with a focus on the approaches employed to promote and facilitate reproducible experiments and the development of NLP-based applications.

Biography

About the speaker: Dr. Richard Eckart de Castilho is a senior research and technical lead at the Ubiquitous Knowledge Processing Lab, TU Darmstadt; the lead developer of DKPro Core, member of the Apache UIMA project, and maintainer of the Apache uimaFIT library [1].

[1] https://www.ukp.tu-darmstadt.de/people/senior-staff/richard-eckart-de-castilho/
Formative Seminars
for your career

- Science communication.
- Reproducible research
- Data management
- Intellectual property
- Gender issues in research
- Career paths
- Ethical issues

All topics to be prepared in the context of your research proposal

Open to new ideas!

Next 19/10 Introduction to the course - Compulsory attendance
DTIC Integrative Seminars - they count as PhD seminars
https://portal.upf.edu/web/etic/integrative-research-seminars

October 24th, 2017
12:30
Auditorium

Towards 5G Wireless Networks
by Angel Lozano

Abstract
Over the last couple of decades, wireless communications have exploded into what is arguably the biggest technological revolution in history. Indeed, the pace of adoption of the cellular phone dwarfs those of other momentous devices such as the TV or the personal computer. Now, with the 4th Generation of wireless networks in service, challenges keep mounting as user expectations grow with competing demands for higher bit rates, vastly enlarged capacities, vanishing latencies, and uniform user experiences. This lecture the upcoming 5th Generation and propounds that it should transcend the cellular structure that has ruled wireless communications to date, and usher in a new age of post-cellular networks.

Invited seminars - they do NOT count as PhD seminars

CBC Seminars - they do NOT count as PhD seminars
http://cbc.upf.edu/activities?language=en
Dissemination: PhD Workshop

• March 2018:
  • 67 posters in 2017
  • Students from QMUL
  • 5 awards (sponsored)
• Interested in joining the organizing committee?

https://www.upf.edu/web/etic_doctoral_workshop/home
Dissemination: Research in 4 minutes

- UPF competition to explain your research in 4 minutes competition
- Awards

https://www.upf.edu/web/rin4
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Vanesa.daza@upf.edu
Vice-director of DTIC, teaching
PhD Grants

- DTIC grants:
  - PIFF1 (*60h/year* teaching duties)
  - PIFF2 (*40h/year* teaching duties)
- FPU (*x + y + z = 120, 30 <= x, y, z <= 60*)
- FI, FPI, ...
- Others (Industrial, PIFF3, ...)

NO teaching
**PhD Grants**

- **DTIC grants:**
  - PIFF1 (*60h/year* teaching duties)
  - PIFF2 (*40h/year* teaching duties)
- **FPU** (*x + y + z = 120, 30 <= x, y, z <= 60*)
- **FI, FPI, …**
- **Others** (Industrial, PIFF3, …)

NO teaching paid extra 70€/hr

check with your supervisor and contact me

sotsdireccio.docenciadtic@upf.edu
PhD Grants

- DTIC grants:
  - PIFF1 (60h/year teaching duties)
  - PIFF2 (40h/year teaching duties)
- FPU \((x + y + z = 120, 30 \leq x, y, z \leq 60)\)
- FI, FPI, …
- Others (Industrial, PIFF3, …)

NO teaching paid extra 70€/hr
check with your supervisor and contact me
sotsdireccio.docenciadtic@upf.edu

FI \leq 30 (1rst year)
\leq 60 (2nd, 3rd year)
FPI \leq 60
What does “an hour” mean?

Not only *going to class*, but carefully *prepare and teach* them, *correct* labs and exercises.

Usually *seminars or practices* in 1-2 subjects. Details directly from the subject *coordinator*.
After first year, Spanish/Catalan is a requirement to renew contracts


We refund first year if you pass!!

\textcolor{red}{\textbf{ONLY FOR DTIC GRANTS!!}}
Is your teaching assignment clear to you?
Do you prefer other courses for next years?
https://portal.upf.edu/web/etic/undergraduate-studies
... 

Send us an email to sotsdireccio.docenciadtic@upf.edu

Vanesa Daza  
Jana Safrankova  
Lluis Bosch
Teaching organisation and support

• What do you need to know?
  • Practical aspects for the first day of class
  • Basic aspects around teaching organisation and regulation
  • Teaching support tools (Aula Global, etc.)
  • Teaching support services (USQUID, CQUID, La Factoria)
  • See, https://portal.upf.edu/web/usquid-etic/teaching_esup

• Teaching Quality & Innovation Support Unit
  • In our building!
    • Pedagogue: Verónica Moreno (55.307)
    • Director/ViceDean for teaching: Davinia Hernández-Leo (55.402)
  • Contact: usquid.esup@upf.edu
  • Resources:
    • http://www.usquidesup.upf.edu/en/
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HOW WE CAN HELP YOU

- **IDTIC Advisers:** Jana Safrankova & Lluis Bosch
- **Support:** Before arriving to DTIC (visas and immigration), staying (NIE, Renewals, Invitation Letters, Social Security Number, Health care, Bank account, Taxes, Registration with the local council) and leaving. **Important! Checking list Summary**
- **Congress Attendance and Short Stay Visa Application**
- **Ambassadors**
- **Bridge programs:** welcome, facebook in order to effectively integrate International Staff and PhD Students into the culture language and academic environment prior to and during full stay.
Welcome to ETIC

• Website: etic/welcome_to_etic
• Contact: ruth.temporal@upf.edu & vanessa.jimenez@upf.edu
• Office: 55.020

HOW WE CAN HELP YOU

• **ETIC’s member form**: Please take your time filling in [this form](#) that will help us make your integration at ETIC easy and agile.
• Access to the facilities offices [UPF’s red card](#).
• Workplace
• UPF e-mail account
• Campus Global: [www.upf.edu](http://www.upf.edu)
• Intranet
• WiFi network: event@upf : unfabr10
Enjoy your stay and welcome!

http://www.upf.edu/etic/
@etic_upf