

UT Austin | Portugal INTERNATIONAL COLLABORATORY FOR EMERGING TECHNOLOGIES, CoLAB

## STUDENT HIGHLIGHT – Tiago Miguel Gonzaga Videira - Instrumental Fado : A generative interactive system (Digital Media)



Tiago is working on an original project which combines the traditional Portuguese music of fado with digital media. As a performer and composer of fado with a research interest in musical informatics, Tiago has a strong personal motivation to contribute to the preservation and memory of Portugal's most important national musical genre, which is currently under consideration by UNESCO for Intangible Cultural Heritage status.

His project consists of three main steps. First is documentation: building a flexible database of fado literature, consisting of sheet music, midi files, analytical, formal and philological commentaries, as well as other relevant information (sources, categories, dates, authorship) for each fado. This documentation stage is also very relevant to questions of ethnomusicology and patrimony. The second stage consists of statistical procedures and musical analysis of the database in order to identify patterns and rules and to infer the laws that govern fado. Finally, a

third stage is to build a digital system, based on the rules we discovered previously, for the generative composition of new instrumental music based on fado.

Tiago believes that his project has not only ethnographic but also pedagogical importance because it will allow a better understanding of what fado is and how to compose and perform it. In addition it will result in a practical application, software capable of generating and playing royalty-free music for use in restaurants, monuments, etc.

## R&D PROJECT HIGHLIGHT

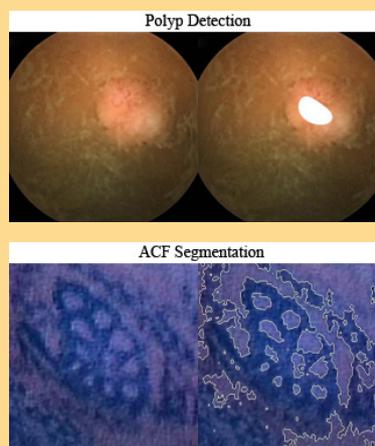
Project: Aberrant Crypt Foci and Human Colorectal Polyps: mathematical modelling and endoscopic image processing (MAT/0009/2008)

Principal Investigator: Isabel Narra Figueiredo

Project Website: <http://www.mat.uc.pt/~cmuc/lcm/endoscopic>

Colorectal cancer is one of the most frequent malignant tumors in the world. This research project is devoted to the study of aberrant crypt foci (ACF) and polyps that are thought to be the precursors of colorectal cancer. In particular, the project is divided into two different but much related aspects, namely, mathematical modelling and endoscopic image processing.

In the modelling part, simulation of the dynamics of the ACF using time dependent partial differential equation (PDE) has been considered. It helps in correlating crypt patterns with cellular kinetics. Image-driven parameter estimation using an absorption-diffusion model has been devised to study dye concentration effect in ACF images. This part also highlights



the importance of incorporating available medical data, which can further shed light on how the ACF structures evolve over time.

In the image processing part, promising results have been obtained for segmentation and computerized analysis of patterns of ACF. Variational and PDE based schemes are studied for effective segmentation, which are built upon a solid mathematical foundation. Currently, the research team is involved in devising a robust detection system for finding colorectal polyps from wireless capsule endoscopic images and videos. This research will be a contribution to biomathematics and medical imaging, useful to assist doctors, with respect to the diagnosis, the prevention and the treatment of colorectal cancer.

# futureplaces

futureplaces places Porto on International Map



In October, the 2010 futureplaces in Porto festival hosted speakers from around the world, local community activist groups, researchers, and several outstanding artists. Through presentations, performances, screenings, and exhibitions, the festival celebrated digital media's potential to strengthen local cultures.

The festival officially opened with a party at the popular Porto club Passos Manuel, and featured a concert by recording artists Jana Winderen of Norway and Mike Harding, head of UK-based media label Touch. Bruce Pennycook of the University of Texas' Butler School of Music and the Department of Radio-TV-Film gave the first keynote speech the following day at the festival's primary venue, prominent Porto cul-

tural space Maus Hábitos. Pennycook's address described how the diffusion of digital technologies has affected the processes of music composition and performance, in some ways changing what it means to be a musician. This opening keynote talk was followed by presentations on different aspects of digital media and community, and a formal opening of the invited artists exhibits.

The outstanding pieces chosen in the highly competitive review process included projects produced by artists from around the world including Portugal, the UK, Finland, Colombia, France, and Germany. To learn more about the artists and the festival itself, please visit [futureplaces.org](http://futureplaces.org).



Food Lab



Outdoor Project Type The Future



Type The Future



RadioFutura



Keynote adress Blaine L. Reinger speaks



Concert The City as an Organ



Tune in Futura Car Tuning Orchestra



Sound Embracing Context by Marc Behrens

# COLAB'S

CoLab interviewed the three curators from the third edition of futureplaces: Heitor Alvelos, Karen Gustafson and Bruce Pennycook.

"... getting the local community more involved is one of the festival's principal challenges..."



Heitor Alvelos



Karen Gustafson



Bruce Pennycook

Photo: Luís Barbosa

## CoLab: How did the idea of organizing futureplaces initially appear?

**Heitor:** In December 2007 I was invited by the program directors to direct a digital media festival. I proposed a content-based project, and the mission of "digital media and local cultures". This was accepted. Karen was welcomed into the team in early 2008, and Bruce this year.

**Bruce:** I was invited by Sharon Stover to join Heitor, Fátima and Karen to help organize and run futureplaces this year and gladly accepted. I was not directly involved in prior years.

## CoLab: What were the original objectives? Do they remain today?

**Heitor:** The objectives: to focus on how new media can change specific social and cultural contexts for the better. To identify successful projects, contexts in need of development/visibility, technology that can make this happen, people who can make this happen. These objectives do remain, as they will: they are ongoing, permanent, constantly renewed.

**Karen:** From the first edition in 2008, the focus has been on digital media and local cultures. I think that if anything, the focus is stronger now than at the beginning. We have hosted some great presentations, workshops, performances, and exhibits over the past two festivals, but in this third edition, this theme was particularly well articulated in a variety of interpretations and contexts, from a presentation of a local hacker community group to some amazing artistic representations of local spaces and experience.

**Bruce:** It is my understanding that "digital life in the community" is the central objective. This theme was central to our selection of events and invited guests. It also influenced the choice of venue - central downtown rather than spread out.



Heitor interviewed by SIC Portuguese Television

## CoLab: What is the overall balance of the three editions?

**Heitor:** Personally, I think we've been creating something very special. The overall mission is being translated into successful endeavors: the work with the CCStop musicians collective, the fostering of radio/

web radio, creative workshops focusing on urban acoustics, traditional shops, hi-tech derives. A consistent growth in informal yet effective partnerships, both local (Sonae, Casa da Música, Porto City Hall, other festivals, Maus Hábitos, other universities) and international (Hiperbarrio Colombia, Madatac, Touch, over a dozen European universities, Norte41, Visible, MediaLab Prado, SXSW, Ars Electronica).

**Karen:** The theme of digital media and local community has become more pronounced every year, even as the activities and perspectives become more diverse. The submissions to the competition this year were especially strong, and the final selections were truly outstanding. The festival has also tightened its geography so that a temporary "neighborhood" was produced in the Passos Manuel area among three closely situated venues. This compression of space was very helpful, allowing festival participants to stay in the same area to meet between performances for coffee, or get together for an informal dinner.

## CoLab: What would you like to underline from this last issue?

**Heitor:** A much stronger sense of community. More flexibility, a more relaxed and creative environment. Exhibited pieces of an overall higher quality. Outdoor events involving participation by passers-by. Much, much stronger media visibility and coverage.

**Karen:** The futureplaces community was tighter and more cohesive this year, and I think it's great that we are moving in this direction.

**Bruce:** First, the community element - "places" - was very strong in most of the events. There were very good speakers. The workshops were lively and interesting but very undersubscribed.

## CoLab: What impact has futureplaces had in the scientific community? And in the local communities?

**Heitor:** Research students have been involved in various fronts: attending futureplaces workshops; presenting research projects in festival sessions; using the festival as a starting point for their own projects. The festival has also been an excellent meeting point for researchers from various universities throughout the world: over 20 universities have so far been actively present throughout the festival. Several representatives are now in touch and developing projects.

**Karen:** The festival is a space for members of the local and international communities to gather and share their work with one another. The festival is unique in that it welcomes a broad range of perspectives, addressing scholarly, artistic, and activist audiences. This can create an environment for "cross-pollination." For example, a local activist might learn of local scholarly research that would enhance her own work in the community, or a researcher might get fresh ideas from looking at artistic perspectives on digital media and local culture. People who might otherwise not meet can learn of each other's projects. Through presentations and informal social events, researchers, activists and artists can learn how others' work may complement theirs, laying the path for future collaborations.

**Bruce:** I cannot see much impact on the scientific community other than the connection between telecom providers. The local community beyond the participants was not strongly represented. However, many students from FEUP did attend events and presentations and hopefully they benefited from that.

## CoLab: What challenges exist for the next edition?

**Heitor:** A strengthening of the festival's outcomes reverting to tangible contexts. Stronger involvement of general population: nurturing the creative and contributive potential of the "average citizen". Funding. Echoing beyond the week of the festival, making it somehow "permanent", woven into the city's overall narrative.



Official Future Places Dinner

**Karen:** The high number of submissions - over 100 from over 20 countries - to this year's competition shows that futureplaces is increasingly known around the world. As a resident of Porto, Heitor can speak to this issue more than I can, but I think getting the local community more involved is one of the festival's principal challenges. This year, the project "It's Raining Families" was especially successful in reaching out to members of the local community, and I hope we will see more work like this.

**Bruce:** I would like to see futureplaces grow into a permanent and highly visible annual event in Porto. The digital media world is beginning to see Porto as a "hot spot" for creative development and, more recently, technical and scientific research in digital media. To achieve this will require a more formal approach to the festival including the publishing of detailed information for the community and participants much earlier in the cycle. In short, futureplaces must strive to operate more like the best international digital art events (for example, Ars Electronica).

## CoLab: How important is the contribution of UT-Austin Portugal Program in the event organization?

**Heitor:** It is at the root of all the work we have been doing. The competences of the various members of staff on both sides have been highly compatible and complementary.



Outdoor performance It's Raining Families



The involvement from local community

Photo: Luís Barbosa

**Karen:** futureplaces is one of the program's primary instruments of capacity-building, bringing global attention to Porto as an emerging center for technological innovation and creativity. The festival brings together artists, scholars, and community activists and creates a space for them to meet, share their perspectives and interests, and plan future collaborations. In doing so, it helps create connections and networks for future projects both within and beyond the city.

**Bruce:** I think that futureplaces needs to become a stand-alone festival. Given the hopeless fiscal situation in Portugal this will require substantial corporate support. I can imagine SAPO or PT or some equivalent becoming a long-term sponsor of this event to augment public funding. UT Austin Portugal should be a participant but not the entire "bank".

## U.Frame Features UT Austin | Portugal Talent



The U.Frame international student film festival was held this October in A Coruña, Spain. This year, UT Austin sent two Radio-Television-Film students to the festival to present their work. Angela Chen was a finalist in the fiction competition with her film "By Jude," a domestic drama that includes the perspective of a boy with a camera. An RTF MFA student Angela Torres, also attended the festival and screened her pre-thesis film, "Frente Noreste (Northeast Front)," which portrays a true story about drug violence in Mexico. Students from U.Porto also presented work at the festival, including Guilherme dos Santos Junior and João José da Costa Batista Pereira.

Professor Stuart Kelban served as a judge for the festival in 2010 and conducted a master class in Writing for the Short Film to 50 students. Kelban commented that this class addressed some of the weaknesses in the movies he screened: "They need more focus on storytelling and characters. It all begins with the script, and the sooner you recognize that the better off you are."

# THE UTEN CORNER

## UTEN Annual Meeting

**UTEN** Portugal  
University Technology Enterprise Network



The 2nd UTEN Annual Conference took place on 25 October 2010 in Lisbon, at the New University of Lisbon, (Reitoria, Campus Campolide), in collaboration with the Foundation for Science and Technology (FCT) and the Portuguese Universities Rectors' Council (CRUP), addressing the theme Science and Technology Commercialization in a Globally Networked Economy.

The potential of the 2nd UTEN Conference was considerably leveraged by the presence of renowned international speakers, by the relevance of Portuguese cases in the Science and Technology Transfer and Commercialization fields, as well as by the attention it received from top political personalities. Thus, the Conference was a high-profile event in the area.

The Minister for Science, Technology and Higher Education, José Mariano Gago, opened the inaugural session. Several technology transfer professionals, researchers and entrepreneurs, along with top management representatives from research and higher education institutions, participated in the Conference.

The main purpose of this year's UTEN Conference was to debate the successful knowledge transfer and technology commercialization, by presenting and discussing international and Portuguese cases where the results of scientific research were translated into new technology based spin-offs, licensing and co-operation agreements, thus maximizing the social and economic benefits. Among other cases, the process of technology transfer

and commercialization of science associated to the creation and the growth of businesses were discussed, such as: Feedzai, We-Adapt, Tomorrow Options, Plux, BIPS, Petsys, Waynergy, particularly in terms of the type of contracts and intellectual property protection, technology licensing and the economic and social benefits of investments in science.

The meeting was concluded by the Secretary of State for Science, Technology and Higher Education, Manuel Heitor.

UTEN connects the major technology transfer offices in scientific and higher education institutions in Portugal, facilitating the specialization of national expertise in this area through advanced training, international internships and networking.

UTEN was established in 2008 by the Foundation for Science and Technology (FCT), in collaboration with the National Institute for Intellectual Property (INPI), within the international partnership UTAustin Portugal, and in close cooperation with experts from technology transfer and commercialization offices at the University of Texas at Austin, Massachusetts Institute of Technology (MIT) and Carnegie Mellon University. UTEN has since been reinforced, always in close collaboration with the Portuguese Universities supported by CRUP, as well as several technology-based companies.

For more information on UTEN (University Technology Enterprise Network), go to: <http://utenportugal.org/>

## 3rd UTEN Workshop 2010 – Nanotechnology

*Research Collaboration & Network Building for Commercialization in NanoSciences*, University of Minho – 15-16 November, 2010

The field of nanotechnology regularly produces some of the most fascinating opportunities for commercialization of new technology across the world. Given nanotechnology's broad reach across industries, however, it can often be troublesome to determine the best pathways to commercialization for nano-based ventures. This workshop will examine effective commercialization strategies for nano across industry and provide a candid view into the role that investors and joint ventures can play in furthering nanotech-

nology across the biomedical, agricultural and materials industries to name just a few. We will also examine best practices in venture creation for nano firms including the strategic use of equity, interaction with investors and how to leverage research for commercial opportunities.

Find out more about this event in our next newsletter or on the workshop website: <http://utenportugal.org/events/nano-workshop-2010/>

### Useful links

[www.utaustinportugal.org](http://www.utaustinportugal.org)

[www.fct.mctes.pt](http://www.fct.mctes.pt)

[www.utexas.edu](http://www.utexas.edu)

[www.ic2.org](http://www.ic2.org)

[www.ati.utexas.edu](http://www.ati.utexas.edu)

[www.austin-chamber.org](http://www.austin-chamber.org)

<http://colab.ic2.utexas.edu/dm/>

[www.utenportugal.org](http://www.utenportugal.org)

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