PhD position (M/F) – Thesis offer (M/F)
(Reference: SEC_NE_PhD_STD_012017)

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<th>Research topics</th>
<th>Spoken trigger and command recognition</th>
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<td>Department</td>
<td>Digital Security</td>
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<td>Offer date</td>
<td>31/01/17</td>
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**Description**

The explosion of the Internet of Things and Smart Objects has given rise to the need for always listening devices with diverse speech and audio processing capabilities. The ambient soundscape is a rich source of information. One source is that of human speech, to which this PhD thesis relates. Sponsored by STMicroelectronics, the goal of the research is to innovate new solutions to always-listening, efficient, reconfigurable and flexible embedded solutions to spoken trigger and command recognition.

In being efficient, solutions must be lightweight in terms of processing power and memory requirements. In being reconfigurable they should allow the selection of different spoken triggers and the creation of new triggers specified with text only (no command-specific speech training data) and in being flexible they should function in multiple languages (English, French and Mandarin).

A first solution will be speaker-independent and should respond to a single spoken phrase. A second solution will support the recognition of multiple spoken phrases and the definition of new phrases. A third solution will be flexible in terms of language. Early work will investigate neural networks whereas the final period will investigate deep learning solutions as a means of delivering improved performance and efficiency.

The PhD studentship is an excellent opportunity to undertake applied research in speech processing within an academic environment and with industrial backing.

**Requirements**

You will have a Master’s degree in engineering, mathematics, computing or a related, relevant discipline.

You will have strong expertise in signal processing, mathematics and programming and have excellent communication skills. Knowledge of C/C++ and Matlab are strongly desirable.

Experience of fixed-point and DSP implementation are welcome as is experience in speech recognition, machine learning and statistical modelling.

You will be highly motivated to undertake challenging research. Proficiency in English (spoken and written) is essential. Knowledge of French is a bonus.

EURECOM specifically encourages women to apply with a view towards increasing the proportion of female researchers.

Application

Screening of applications will begin immediately, and the search will continue until the position is filled.

Applicants should send to the address below (i) a one page motivation statement, (ii) a CV and (iii) two reference letters or contact details for two referees (preferably one being the applicants Master’s thesis supervisor).

Applications should be submitted by e-mail to:

- Nick EVANS (Nick.Evans@eurecom.fr)
- secretariat@eurecom.fr

with the reference: SEC_NE_PhD_STD_012017)

Postal address

CS 50193 - 06904 Sophia Antipolis, France

Contact

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Fax number

+33 4 93 00 82 00

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EURECOM is a French graduate school and a research center in communication systems based in the international science park of Sophia Antipolis, which brings together renowned universities such as Télécom ParisTech, Aalto University (Helsinki), Politecnico di Torino, Technische Universität München (TUM), Norwegian University of Science and Technology (NTNU), Chalmers University (Sweden) and Czech Technical University in Prague (CTU). The Principality of Monaco is a new institutional member. The Institut Mines-Télécom is EURECOM's founding member.

EURECOM benefits from a strong interaction with the industry through its specific administrative structure: Economic Interest Group (kind of consortium), which brings together international companies such as: Orange, ST Microelectronics, BMW Group Research & Technology, Symantec, Monaco Telecom, SAP, IABG.

EURECOM deploys its expertise around three major fields: Digital Security, Data Science and Communication Systems. EURECOM is particularly active in research in its areas of excellence while also training a large number of doctoral candidates. Its contractual research is recognized across Europe and contributes largely to its budget.

Thanks to its strong ties set up with the industry, EURECOM was awarded the “Institut Carnot” label jointly with the Institut Telecom right from 2006. The Carnot Label was designed to develop and professionalize cooperative research. It encourages the realization of research projects in public research centers that work together with socioeconomic actors, especially companies.

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