Fulbright Lectureship in Computer Science and Engineering at the University of Bologna

Award # 10572   **Grant Category: Teaching/Research**

▶ **Number of Awards:**   One grant

▶ **Discipline and specialization:**

Computer Science, Engineering
The DISI department (Computer Science and Engineering Dep.) includes different research labs that work on Big Data. Topics of interest include:

- Support for intelligent management of Big Data for storage, access, monitoring, and complex analysis,
- Real-time analysis, possibly with approximate techniques, with speed and/or green-computing/small footprint computing objectives, and assigned quality targets,
- General frameworks for the implementation of mining algorithms in the Big Data field with the "agnostic platform" approach, i.e., independent of deployment technology used,
- Development of algorithms for highly parallel architectures,
- Business intelligence and data warehousing (BI & DW) techniques for manipulating and displaying Big Data,
- Seamless integration of complex media streams analysis on Big Data platforms,
- Cloud computing support for elastic provisioning of cluster computing resources for Big Data/Stream processing
- Geographic data storage and query optimization frameworks with geodata-aware load balancing and indexing techniques,
- Support Mobile Cloud Computing (MCC) where Big Data makers and consumers are mobile and/or Internet of Things (IoT) devices that want to offload storage/processing load on the cloud,
- Within the Open Citation project, funded by the Sloan Foundation, creating and analyzing open quotation networks using the technologies of Semantic Web and Semantic Publishing,
- In the context of textual mining on Big Data textures, DISI SmartData research group is committed to developing models for automatic search and classification of texts through Transfer Learning from large textual corpus to specific tasks and using word embedding techniques,
- With funding from the Elsevier publishing house, characterization of quotes available in extensive collections of open and proprietary bibliographic data,
- In collaboration with the Department of Italian studies, the representation of complex document models for the analysis and automatic processing of concepts relevant to classical and author philology on large amounts of historical documents.

SPECIAL FEATURES
The Fulbright lecturer can actively collaborate with pees of the main DISI research groups, along with other departments on one or more of topics of his/her interest. As a computer science and engineering department, DISI is open and recognizes the importance of inter- and multi-disciplinary research and teaching initiatives. Accordingly, we can facilitate interactions between the lecturer and the local and university community. We also plan to involve the scholar in activities within the CLUSTER Association of the Emilia Romagna region on Innovation in Services, as well as in joint innovative entrepreneurship and Open Living Lab initiatives with other university departments and companies in the area.

DISI has a history of hosting visiting professors. The selected Fulbright Lecturer will be in an international-friendly environment, and will receive the accomodations provided to our international guests, including: an office space with access to computer network and IT resource (including a PC if needed), access to the university canteens (e.g., at the Engineering college in the Bologna Campus, but others are available in Bologna), as well as facilitated access to the Engineering college.

Additionally, the selected scholar will have:

Access to the University Library Organization: The University of Bologna has a wide network of facilities, library and documentary services providing support for studies, teaching, research, professional and cultural activities.
Access to the University Museum Network: A coordinated network of 13 museums (including the Palazzo Poggi Museum) that protects and promotes the University's historical and artistic assets.
Access to the Collegio Superiore: The Collegio Superiore provides supplementary training courses with a strong interdisciplinary focus for students admitted on a merit basis. This training is enriched by meetings and seminars held by Italian and international academics, as well as through exchanges with other European schools. The Fulbright Lecturer will be invited to attend the Collegio Superiore, and the selected scholar would be welcome to teach a seminar.
Access to the Institute of Advanced Studies: The Institute selects PhD students, PhD graduates, and high profile academics from all over the world who are invited to Bologna by University professors. The Institute promotes the exchange of ideas and knowledge at an international level and creates a meeting point for Italian and international academics. The Fulbright Lecturer will benefit from this high-profile international environment, which results in the opportunity to cooperate with academics from all over the world.
During the Fulbright lecturer's stay, the department will schedule "data lab meetings" on a periodic basis to develop an open conversation on issues related to methods. Additionally, there is a possibility that the Fulbright lecturer will be actively involved in grant proposals and ongoing research carried out by the department's faculty members.

The Fulbright scholar will be invited to attend seminars held at the Istituto di Studi Avanzati of the University of Bologna.

| **Grant period and activity:** | Three to six months (six months preferred). Grant must begin September 2020 or January 2021. |

The incoming scholar may be involved in teaching activities at different levels, including PhD and Master programs: a commitment of at least 60 hours (over at least 20 weeks); possibly increased up to 100 hours overall, depending on an agreement with the selected grantee. These lessons can also be included in some of the following Master level courses and PhD degrees, as well as graduate Executive Master's programs:

Master level courses (the average class size is in the range 20-50):

- Infrastructures for Cloud Computing and Big Data M, held by Prof. Antonio Corradi, within the di Master's degree course in Computer Engineering (Bologna Campus);
- Technologies and systems for data base and big data management held by Prof. Marco Patella and Prof. Paolo Ciaccia, within Master's degree course in Computer Engineering (Bologna Campus);
- Data Mining M, held by Prof. Claudio Sartori, within the Master's degree course in Computer Engineering ((Bologna Campus);
- Big Data, within the Master's degree course in Computer Science and Engineering (Cesena Campus).
- Development of the curriculum through international activities (e.g., involvement in the design of international proposals and initiatives, conference organization, etc.).

PhD level degrees (class size of around 20 people):

- Computer Science and Engineering (director Prof. Paolo Ciaccia): a course on big data themes. In addition, some students in this PhD program have research specifically devoted to Big Data.
- Data Science and Computation (director Prof. Marco Roccetti): A collboration between the Milan Polytechnic and the Golinelli Foundation. This course develops studies and research in the basics of the discipline and in all its different application aspects, shown by the participation of the eight different University Departments participating.
- Structural and Environmental Health Monitoring and Management: This multidisciplinary track is aimed to combine together methodological and technological skills that were previously combibned in three different PhD programs ("Civil, Chemical, Environmental and Materials Engineering", "Computer Science and Engineering ", " Electronics, Telecommunications and Information Technologies").
- The selected scholar may also teach in the Executive Master's program in Data Science directed by Claudio Sartori (Bologna Business School – BBS, Bologna).

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Other activities:

The incoming scholar, being involved in research activities of her/his interest, will also be exposed to the day-by-day life of DISI research groups which includes:

- Tutoring activities of MSc and PhD students for their project and thesis;
- Participation in group seminars
- Preparing lectures on specific topics of interest/expertise, such as data analysis, methods, and tools;
- Development of the curriculum through international activities (e.g., involvement in the design of international proposals and initiatives, conference organization, etc.).

Additionally, the Master's degree in Computer Engineering is currently working towards the implementation of a double-title international curricula, in collaboration with the University of Stockholm and the University of Bielefeld. The selected chair in Big Data would further strengthen this internationalization project by expanding offerings in English.

We believe there is much room for joint design initiatives at different levels, from European design (H2020) to USA (MAE), collaborating both as a department (DISI) and as a national laboratory (CINI Laboratories - National Interuniversity Consortium for the Computer technology).

In addition to being a prestigious academic exchange program, the Fulbright Program is designed to expand and strengthen relationships between the people of the United States and citizens of other nations and to promote international understanding and cooperation. To support this mission, Fulbright Scholars will be asked to give public talks, mentor students, and otherwise engage with the host community, in addition to their primary activities.

During the Fulbright grant, the scholar may be also invited to take part in academic meetings, conferences, seminars and other program-related activities organized by Italian or European universities, under the Fulbright Inter-Country Program http://www.fulbright.it/fulbright-intercountry/

Qualifications: Open to academics only.
The Department welcomes any tenured or tenure track professor. At least three years of teaching experience is required. A good research and publication record is desirable.

Language: English as a default, and any other language knowledge is welcome. Conversational Italian is considered helpful.

Letter of Invitation and project proposal: Letter of invitation should not be requested. Applicants should submit a detailed project proposal in the Fulbright US Scholar application.

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▶ **Award benefits:**	€9,000 for three months; €12,000 for four months; €15,000 for five months; €18,000 for six months, and a travel allowance of € 1.100. The grantee will be covered by Health and Accident Insurance for the whole grant period, provided to participants in the Fulbright cultural exchange Program by the *United States Department of State*.

The University of Bologna will provide assistance in finding accommodation on private market through its housing service SAIS.

UNIBO staff and students can benefit from special discounts to cinemas, museums and theatres

Focusing on transport and mobility: Mi Muovo: single train-bus travel pass valid throughout Emilia Romagna
In addition, there are several activities that the scholar might be involved in and benefit from: University Sports Centre - CUSB; University Museum Network - SMA; Collegium Musicum University of Bologna Choir and Orchestra; Wi-Fi wireless connection; UniboCultura - UniboCultural initiatives

Tax Code desk for students and international teaching staff: A help desk from which University students and international teaching staff may obtain an Italian Tax code.

Office space with phone, computer and printing facilities; Secretarial assistance; Access to internet and to the bibliographic datasets of the University; University badge (which provides access to all facilities of the University of Bologna); Welcome kit. |
| ▶ **How to apply:** | Fulbright Scholar Awards to Italy are assigned through an annual competition administered at the national level in the US by the Council for International Exchange of Scholars - CIES in Washington DC, in collaboration with the Fulbright Commission in Italy. Potential candidates can apply online through CIES (https://apply.iie.org/apply/).
Information on the Fulbright US Scholar Program, catalogue of awards, eligibility requirements, tips, guidelines and resources for applying, review criteria, selection and competition timeline is available on CIES website at https://www.cies.org/program/fulbright-us-scholar-program |
| ▶ **Application Deadline:** | Monday, September 16, 2019 |

For information about the grant, please contact Fulbright Commission staff:

Commissione per gli Scambi Culturali fra l'Italia e gli Stati Uniti
The US - Italy Fulbright Commission
Via Castelfidardo 8 - 00185 Rome Italy
www.fulbright.it

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Resources on the Italian university system and research:

❖ MIUR - Ministry of Education, Universities and Research - www.istruzione.it
Italian Government - Ministry of Education, Universities and Research

❖ CRUI - Conference of Italian University Rectors - www.crui.it
National Conference of Italian state and private universities

❖ ENIC-NARIC network - www.enic-naric.net/index.aspx?c=Italy
Italy Country page on the ENIC-NARIC network of European Information Centers on academic recognition and mobility

❖ Ricerca Italiana - www.ricercaitaliana.it
National portal on the world of Italian Research

❖ ICCU - www.iccu.sbn.it
National Institute for the Italian Library Catalogue

Travelling to Italy

❖ ITALIA - www.italia.it
Discover Italy - info, ideas and resources for the travel to Italy

❖ CULTURA ITALIA, Un patrimonio da esplorare - www.culturaitalia.it
Italian Ministry of Cultural Heritage and Activities - Cultural paths and resources from the world of Italian culture

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