



SEAHA

EPSRC CENTRE FOR DOCTORAL TRAINING
SCIENCE AND ENGINEERING IN
ARTS HERITAGE AND ARCHAEOLOGY

SEAHA Studentship: Large-scale metadata enrichment of 3D cultural heritage artefacts by automatic and user-based metadata acquisition

The EPSRC Centre for Doctoral Training in [Science and Engineering in Arts, Heritage and Archaeology](#) at University College London, University of Oxford and University of Brighton, in collaboration with Fraunhofer-IGD Competence Center in Cultural Heritage Digitization and MyMiniFactory Scan the World project are seeking applications for a fully funded four-year doctoral research studentship starting in early 2018 on the topic Large-scale metadata enrichment of 3D cultural heritage artefacts by automatic and user-based metadata acquisition.

The pace at which digital assets for Arts, Heritage and Archaeology are being acquired continues to accelerate in both the raw volume acquired and the variety of datatypes being recorded. Fraunhofer-IGD have recently developed new technology which automates the acquisition of 3D digital models of cultural artefacts, making it possible for museums and other cultural organisations to consider digitising their collections on a large scale. However, building large collections of 3D models, and other digital assets (such as text, images, video, manuscripts etc.), brings with it new problems of documentation, search and presentation. Such processes can be supported by creating semantic metadata which link assets together and provide searchable representations of properties such as shape, texture or colour (for example). This project aims to develop scalable approaches to metadata acquisition (automatic or semi-automatic) which can be integrated into cultural heritage practice and/or web-based 3D-centered annotation tools to enhance the management, accessibility and experience of digitised cultural heritage. This doctoral project will aim to address the following research questions:

1. What challenges does the advent of large scale 3d digitisation bring to the organisation and management of museum collections?
2. What new opportunities for scalable metadata acquisition arise from the availability of large scale digitised collections?
3. Can the provision of scalable acquisition tools have a significant impact on cultural heritage practice, workflows and standards in an age of large-scale digitisation?

The research methodology will be to:

1. Develop research scenarios in conjunction with the cultural collaborator to hypothesise new approaches to metadata acquisition that could be empowered by the availability of large-scale digital asset collections.
2. Select an experimental set of artefacts to explore the practicalities of metadata extraction from large scale digital collections and the balance of automatic



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detection of relationships within the collection compared with the use of manual intervention

3. Engage with potential CH researchers to develop web-based 3D-centered annotation tools to support the analysis of relationships in the resulting digital collection.
4. Evaluate the degree to which the identification of semantic links in a digital collection can be effectively automated and produce results that would not have been anticipated without the use of the technologies

As a SEAHA student, you will have unparalleled access to research infrastructure and expertise across three universities and 60+ heritage, research and industrial partners. In addition to the university doctoral training requirements, SEAHA students take part in an exciting range of cohort activities, ranging from residential events and group projects, to conferences and careers events. Please visit the [SEAHA website](#) for details.

Academic entry criteria: The successful candidate must have a minimum 2:1 undergraduate degree in a relevant discipline such as engineering, architecture, science or physics. Candidates must have an excellent record in aspects of computer science related to the project (consistent with a first or upper-second in Computing Science), with strong programming skills in Java and optional C# and C++, as well as experience with HTML5, JavaScript and Apache Tomcat. Experience of and commitment to working within a cultural context (for example through a taught Masters in related areas) would be an advantage. Professional competence and experience in industry would be an advantage.

Applicants are also required to submit a personal statement explaining their interest in and understanding of the topic, with any relevant experience, and invited to expand on the project brief if they wish (no more than 1000 words in total).

English language entry requirements

Applicants whose first language is not English must have successfully completed a Secure English Language Test (SELT) in the last two years. Applicants who have obtained or are studying for a UK degree may apply without a SELT. However, the university may request a SELT is taken as part of any award made.

English language IELTS requirements are minimum of 6.0 in each component.

If you have an English language qualification other than IELTS, please contact us to see if you are eligible to apply for a studentship. The UK Home Office will not accept TOEFL tests as proof of meeting the English language requirements.

As the candidate will be working intensively and for several months at a time in a team based in Darmstadt (Germany), knowledge of the German language is encouraged.



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Training path: The student will be part of the EPSRC Centre for Doctoral Training SEAHA (Science and Engineering for Arts, Heritage and Archaeology). Students will register for the one year MRes SEAHA at UCL in year 1 and then continue to PhD studies for years 2-4 of the studentship. The student will be encouraged to spend time working at the Fraunhofer-IGD Competence Center and other partner institutions.

Enquiries: Please contact the academic supervisor for further information, Dr Roger Evans R.P.Evans@brighton.ac.uk or the SEAHA administrator for Brighton, Corinna Hattersley-Mitchell, c.hattersley-mitchell@brighton.ac.uk

Funding: The SEAHA Studentship will cover home fees and a stipend of up to a maximum of £18,172 per year (current rate) for [eligible applicants](#) and a substantial budget for research, travel, and cohort activities. Non-EU applicants are not eligible for funding.

The award will be subject to a Grant Agreement between UCL, and University of Brighton.

Application deadline: 17.00 on 15 January 2018

Starting date: Early 2018

How to apply:

The application should be submitted via the University of Brighton online application and not by the UCL online admissions system. You can find the University of Brighton application page here: <https://www.brighton.ac.uk/research-and-enterprise/postgraduate-research-degrees/funding-opportunities-and-studentships/2017-large-scale-metadata-enrichment-of-3d-cultural-heritage-artefacts.aspx>

We will only consider complete applications - the application is complete once you have uploaded all of the following:

- Your personal statement (maximum 1,000 words).
- Copies of your bachelors and master certificates, including transcripts.
- Copy of your IELTS (or equivalent) certificate (if applicable).
- Copy of your passport.
- Two references uploaded or requested - one must be an academic reference from your most recent period of study. Both must have been written within the last year.

Interviews are likely to take place in the week commencing 29 January 2018. Please mention in your covering letter if you will not be available at this time. Remote interviews (e.g. via skype) are possible if necessary.