UK Research and Innovation

KING'S College LONDON

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UKRI Centre for Doctoral Training in Safe and Trusted Artificial Intelligence

www.kcl.ac.uk/nms/depts/informatics/stai

Apply Now for PhD place: first round deadline 17 March 2019

Information session: Tuesday 12 March, 5pm – 6pm, King's Building K-1.14, King's College London. Email stai-cdt@kcl.ac.uk to book your place, with "info-session" in subject.

The overarching aim of the UKRI Centre for Doctoral Training (CDT) in Safe and Trusted Artificial Intelligence (STAI) is to train the first generation of AI scientists and engineers in methods of safe and trusted AI. An AI system is considered to be safe when we can provide some assurance about the correctness of its behaviour, and it is considered to be trusted if the average user can have confidence in the system and its decision making. The CDT focusses particularly on the use of model-based AI techniques for ensuring the safety and trustworthiness of AI systems. Model-based AI techniques provide an explicit language for representing, analysing and reasoning about systems and their behaviours. Models can be verified and solutions based on them can be guaranteed as safe and correct; and models can provide human-understandable explanations and support user collaboration and interaction with AI – key for developing trust in a system.
King's College London and Imperial College are renowned for their expertise in model-based AI and host some of the world's leaders in the area. Core research areas include:

- Verification & Testing, to provide guarantees about system behaviour;
- Logic in Artificial Intelligence, for efficient and expressive knowledge representation and reasoning;
- Planning, which allows the synthesis of solutions to achieving complex tasks that are correct by construction;
- Argumentation & Dialogue, which supports explanation and transparent reasoning, and can allow joint decision-making between humans and AI systems;
- Norms & Provenance, to guide behaviour in the context of organisational structures, and track and explain data, allowing identification and mitigation of anomalies;
- Human-oriented AI, which aims to support collaboration and communication between machines and humans.

This depth and breadth of expertise in model-based AI is complemented with technical areas such as cybersecurity and data science, and with expertise related to the implications and applications of AI in areas such as security studies & defence, business, law, ethics & philosophy, social sciences & digital humanities, natural sciences & medicine.

How to Apply
The UKRI Centre for Doctoral Training in Safe and Trusted Artificial Intelligence will fund up to 15 studentships (of around £17000) each year (depending on the support available) starting from September 2019. Applications are now open for September 2019 entry. The deadline for the current round of applications is 17 March 2019. Details on how to apply are available on the web at: https://www.kcl.ac.uk/nms/depts/informatics/stai/how-to-apply

Partners:
Engagement with a broad range of non-academic partners is a key component of the UKRI Centre for Doctoral Training (CDT) in Safe and Trusted Artificial Intelligence (STAI). This engagement provides assurance that both the research supported by the CDT and the skills developed in our students will be relevant and valuable to industry and society at large, while also informing and supporting UK industry in producing state-of-the-art safe and trusted AI solutions. Organisations who have already indicated their willingness to partner with the STAI CDT include: the Association of Commonwealth Universities; Amazon Web Services; Alan Turing Institute; British Library; BT; Codeplay; ContactEngine; Ericsson; Ernst & Young; Fondazione Bruno Kessler (FBK); Five AI; GreenShoot Labs; hiveonline; IBM France; Mayor's Office for Policing and Crime; National Archives; Norton Rose Fulbright; Ocado Technology; Royal Mail; Samsung Electronics; Thales; University of New South Wales; Vodafone.

Training Programme
The STAI CDT offers a unique four-year programme, focussed on the use of model-based AI techniques for ensuring the safety and trustworthiness of AI systems. Students will engage in various training activities, alongside their individual PhD project, ensuring that not only are they trained in state-of-the-art AI techniques, but also that they acquire a deep understanding of ethical, societal, and legal implications of AI in a research and industrial setting. Through engagement with the CDT's diverse range of industrial partners, students will be exposed to the different experiences, challenges, and technical problems involved in both startups and large corporations. Training activities include: Technical training in model-based techniques for safe and trusted AI; Interdisciplinary training on responsible research and innovation for AI; Training on the philosophy and ethics of AI; Public engagement training; Entrepreneurial mindset training; A group project, run in collaboration with the CDT's industrial partners; Regular seminars and masterclasses on broad-ranging topics relevant to the development of STAI; A hackathon, framed around challenges co-developed with the CDT's industrial partners; Diversity and inclusion training, including mentoring practices, impact of diversity and inclusion on group dynamics, and inclusive strategies for good research practice. In addition, students will have the opportunity to apply for an internship at one of the CDT's partner organisations and to bid for an enrichment placement at the Alan Turing Institute.

The UKRI Centre for Doctoral Training (CDT) in Safe and Trusted Artificial Intelligence (STAI) is committed to providing an inclusive environment in which diverse students can thrive.

Professor Michael Luck, Director, King's College London
Dr Elizabeth Black, Co-Director, King's College London
Dr Natalia Criado, Co-Director, King's College London
Dr Daniele Magazzeni, Co-Director, King's College London
Professor Alessio Lomuscio, Deputy Director, Imperial College
Dr Fariba Sadri, Co-Director, Imperial College
Professor Francesca Toni, Co-Director, Imperial College

Any questions about the STAI CDT should be sent to: stai-cdt@kcl.ac.uk