



2016-IPR-A5-FGIV-7964

Digital transformation – machine intelligence and human behaviour

Position for:

**FG IV Project Manager -
Technical Project Leader
(Scientific)**

As the science and knowledge service of the Commission, the mission of DG Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle.

The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: <http://www.jrc.ec.europa.eu>

In its recently established Centre for Advanced Studies (CAS), the JRC is deepening its knowledge base and explores new research areas of relevance for European policy. The CAS provides an interdisciplinary and stimulating space where JRC scientists can engage in new research thematic areas and connect with leading institutions in the field worldwide.

The JRC is now looking for a Lead Scientist to develop a novel CAS project on "Digital transformation – machine intelligence and human behaviour". The aim of the project is to investigate how the massive increase in machine-produced information has altered the cognitive balance between humans and machines. Machine intelligence may provide cognitive assistance but may also affect personal decision making and behavioural autonomy and raise privacy issues. The objectives of the project would be to investigate (a) how and under which conditions this change in cognitive balance may improve or worsen private and societal welfare, and (b) how machine-intelligence driven changes in the gap between private and social welfare may require changes in policy.

Within the CAS, the lead scientist will establish an interdisciplinary team of up to four scientists, design the concept, methodology and implementation plan of the project, contribute to the excellence of the output and international outreach, establish cooperation with leading European and international experts in the field, and conclude the project with key scientific findings and recommendations for policy makers. The team may include (or collaborate closely with) researchers and data scientists in private firms that manage large datasets and machine learning tools that are relevant for this project. The project has a maximum duration of three years and is well provided with financial resources for execution.

Qualifications:

Candidates must have

- a PhD (doctoral degree) in economics, cognitive science or computer science or a minimum of five years professional experience after university studies;
- Demonstrated experience in micro-economics research in the digital economy, in network modelling in cognitive science, or in machine learning techniques and human-machine interaction would be an asset;
- Experience in working in (or with) data-intensive firms

	<p>that use machine intelligence techniques would be an asset;</p> <ul style="list-style-type: none"> • Professional experience in leading research projects, teams and/or international networks. <p>Proven interest and skills in developing and implementing new ideas, in particular in multi-disciplinary fields, are an advantage.</p> <p>Excellent written and spoken English (C1) is essential</p> <p>Interested candidates should provide in addition to the application form, a curriculum vitae indicating a list of publications with the 10 most relevant publications highlighted.</p> <p>As part of the application form, applicants should provide a short research proposal on the topic (see annexed briefing) specifying the objectives, concept and methodology (2 pages max).</p> <p>Upon request a contact point for references may be requested.</p>
<p>Directorate Unit</p>	<p>Strategy and Work Programme Coordination Scientific Development</p> <p>JRC Centre for Advanced Studies The digital transformation - machine intelligence and human behaviour</p> <p>Further information: https://ec.europa.eu/jrc/en</p>
<p>Indicative duration</p>	<p>12 months initial contract with possible renewals up to maximum 6 years</p>
<p>JRC Site Country</p>	<p>Ispra or Seville</p> <p>Italy or Spain</p>
<p>Rules and eligibility</p>	<p>The candidate must be on a valid EPSO reserve list for Function Group IV contract staff or have applied to the permanent open call for researchers FG IV:</p> <p>https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-iv-researchers</p> <p>Auxiliary contract staff: https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/contract-staff-members</p> <p><i>Please note that due to the high number of applications received only shortlisted candidates will be contacted.</i></p>

Background
The Digital Transformation - Machine Intelligence and Human Behaviour

As enormous amounts of information and information processing capacity become available, digital information technology induces structural changes in individual human behaviour and in the collective (social) behaviour.

The interaction between infinitely scalable machine intelligence and limited human cognitive capacities result in a changing cognitive balance. Machine learning on the one hand can provide cognitive assistance in the assessment of the information, but on the other hand it may impact individual and personal decision making and behavioural autonomy and responsibility.

In particular, the data and behavioural algorithms shaping the context within which we make choices are mostly owned by private companies whose behavioural motives may not necessarily coincide with individual motives and welfare. The prospect of overcoming the limitations of traditional sensory communication interfaces will push this frontier even further.

These changes will have an impact on the economy and economic theory, but will stretch far beyond and include individual cognitive and psychological effects and changes in the economic, social and political institutions that govern collective behaviour. An urgent, important and complex and policy relevant question in this context is how the next generation of computing affects human society including the concept of privacy and free will.

This is an interdisciplinary research area that combines the insights from economics, cognitive science and computer science, amongst others. Validation of these insights will require collaboration with companies that hold most of the relevant (big) data in the digital economy.