The University of Queensland - IIT Delhi Academy of Research (UQIDAR)
Joint PhD Project Proposal Template

1. Project details

<table>
<thead>
<tr>
<th>Project title</th>
<th>Creating Awareness of Sexual Violence using Immersive Virtual Environments</th>
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</thead>
<tbody>
<tr>
<td>Project ID</td>
<td>UQIDAR- 00150</td>
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2. Supervision team

Please visit the IITD website www.iitd.ac.in and UQ website http://researchers.uq.edu.au/ to highlight potential collaborators that would be best suited for the proposed project. Complete where possible – advise if you’d like assistance establishing contacts.

<table>
<thead>
<tr>
<th>University of Queensland</th>
<th>IIT Delhi</th>
<th>External/Industry (if applicable)</th>
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</thead>
<tbody>
<tr>
<td>Supervisor name and title</td>
<td>Dr Arindam Dey</td>
<td>Prof. Subodh Kumar</td>
</tr>
<tr>
<td>School or department (or company, if applicable)</td>
<td>ITEE</td>
<td>CS&amp;E</td>
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<td>Phone number</td>
<td>+61 7 3365 4537</td>
<td>+91 11 26596032</td>
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<td>Email-ID</td>
<td><a href="mailto:a.dey@uq.edu.au">a.dey@uq.edu.au</a></td>
<td><a href="mailto:subodh@cse.iitd.ac.in">subodh@cse.iitd.ac.in</a></td>
</tr>
<tr>
<td>URL for more info</td>
<td><a href="https://researchers.uq.edu.au/researcher/22330">https://researchers.uq.edu.au/researcher/22330</a></td>
<td><a href="http://www.cse.iitd.ernet.in/~subodh/">http://www.cse.iitd.ernet.in/~subodh/</a></td>
</tr>
</tbody>
</table>

3. Other supervisors

Please provide information about other associate supervisors below.

Full name and title(s): Prof. Barbara Masser, Australian Red Cross Blood Service Chair of Donor Research
School/department/company details: School of Psychology, The University of Queensland
Phone: +61 7 3365 6373
Email: b.masser@psy.uq.edu.au
URL: https://researchers.uq.edu.au/researcher/654

2. Field Of Research (FOR) codes

Specify up to four four-digit FOR codes for your project – see here for more detail on FOR codes.

1 1701
2 1801
3 0801
4

3. Keywords

Please choose up to 4 keywords for your project. E.g. Nanotechnology, data science, novel batteries, etc. Keywords will assist in classifying project and presenting projects to students on the applications portal.

1 Extended Reality
2 Sexual Violence
3 Social Awareness
4 Education
4. Discipline background of candidate

Please outline the preferred background of your student. E.g. Organic chemistry, physiology, topology, CFD, etc. This will assist in presenting projects to applicants on the apps portal.

| 1 Computer Science | 2 Psychology | 3 Sociology | 4. |

5. Project description

While gender-based violence (GBV) against women remains a key social problem around the world, incidence rates vary considerably by country, with some of the highest rates occurring in south Asian countries, including India. It is estimated that in Delhi over 90% of women have experienced sexual violence in a public place (Zietz & Das, 2018). While most of this violence is verbal, Bhatla and colleagues (2012) found that over 30% of 16-49 year-old women had experienced physical violence in a public place in the last 12 months.

Sexual violence has a devastating impact on the victim. Analyses in India have shown that aside from the psychological and physical trauma experienced by the victim, the experience of GBV can have a range of additional consequences (e.g., early marriage; Verma et al., 2013). However, our current understanding of the factors that underpin or trigger sexual violence in an Indian context is incomplete, as is our knowledge of how to reduce the incidence of such violence.

The primary aim of this project is to address these gaps in our knowledge and to trial an innovative approach to reduce the incidence of sexual violence. Specifically, in phase 1, we will identify the constellation of beliefs within individuals that support the perpetuation of GBV in an Indian context, with Australian data collected for comparative purposes. In phase 2, we will use virtual reality (VR) and quantitative measurements (neurological and physiological signals including eye-tracking), to consider how these individual beliefs direct attention in contexts where sexual violence commonly occurs (Süssenbach et al., 2017), again examining similarities and differences between participants in Australia and in India. In the final phase, we will develop and evaluate immersive and culturally appropriate interactive VR scenarios to challenge the key beliefs underpinning the perpetuation of sexual violence in the different cultural contexts.

References


6. Project deliverables/outcomes

1. The identification of the constellation of beliefs within individuals that support the perpetuation of GBV in an Indian context, with Australian data collected for comparative purposes.
2. Using an innovative paradigm drawing on virtual reality and quantitative measurements (neurological and physiological signals including eye-tracking) to consider how these individual beliefs direct attention in contexts where sexual violence commonly occurs (Süssenbach et al., 2017), again examining similarities and differences between participants in Australia and in India.
3. The development and evaluation of immersive and culturally appropriate interactive VR scenarios to challenge the key beliefs underpinning the perpetuation of sexual violence in the different cultural contexts.
4. Results will be published in world-leading journals and conferences.
7. **Research impact themes**
Highlight the research impact theme(s) this project will address. Feel free to nominate more than one. For more information, see [http://www.uq.edu.au/research/impact](http://www.uq.edu.au/research/impact)

8. **Type of student**
This project is best suited for an:

- i-student
- a-student
- i- or a-student

Please note that:
- an i-student will be expected to spend year-1 at IIT-D, year-2 at UQ, and the remaining time at IIT-D.
- an a-student will spend year-1 at UQ, year-2 at IIT-D, and the remaining time at UQ.
- All students will be required to complete some amount of coursework in their first year.

9. **Student capabilities and qualifications**

**Essential Capabilities:**
- Experience of virtual reality development using Unity 3D and/or Unreal Engine
- Interest in social psychology
- Strong coding skills

**Desirable Capabilities:**
- Experience with wearable physiological sensors and eye-tracking
- Experience of running user studies
- Awareness of issues surrounding sexual violence/gender inequality

**Expected qualifications (Courses/Degrees etc):**
- Bachelor of Technology