Department	School of Computing
Supervisors	Dr Rod Selfridge
Project Title	Safe City Sound Map

PROJECT DESCRIPTION

This project aims to create a sound map (sonification) indicating areas and times when women feel harassed or intimidated as well as where and when they feel happy and safe. Harassment and intimidation are an everyday experience for women in public places and are believed to be vastly under reported. A 2021 UN Women UK survey found that 71% of women have experienced sexual harassment in a public space [APPG, 2021]. It also showed that 95% of women who experienced sexual harassment did not report these incidents. The data related to harassment and intimidation of women in public spaces is intrinsically linked to location, time of day, day of the week as well as season of the year.

Sonification can be defined as auditory presention of data in a meaningful manner [Kramer, et. al., 2010]. In order to allow others to empathise, drive social change and improve shared spaces for all citizens soundscapes shall be developed [Fiebig, et.al., 2020]. The use of mixed reality (MR) and similar media can be effective in communicating the emotional aspects of harassment and intimidation for women [Dirin, et. al., 2018]. Proposed technologies may include GPS, Apple / Google Maps and web enabled applications, which can be used in situ., to plan ahead, or educate the wider public.

Acquiring anonymous data will be required, building on experiences and feedback from those affected by harassment and intimidation. Developing and strengthening collaborative relationships with partners within government, business and third sector will ensure that relevant data is gathered in a sensitive and timely manner. Studies will be undertaken to identify compelling sonification mappings for the data set.

The use of procedural audio sound models would allow users to interact with the data, changing parameters (for example, time of day) in real-time to produce immediate changes in the sonification. Suitable user interfaces will be developed to identify the most appropriate method users can interact with the sonification, gain maximum understanding of the data and communicate its impact upon those affected.

Applications are invited from individuals who are motivated in supporting women's safety and helping to create safer public spaces for all citizens.

Academic qualifications
A first degree (at least a 2.1) ideally in Sound Design or a closely related discipline with a good fundamental knowledge of computer science and data management.

English language requirement
IELTS score must be at least 6.5 (with not less than 6.0 in each of the four components). Other, equivalent qualifications will be accepted. Full details of the University's policy are available online.

Essential attributes:

- Experience of fundamental Sound Design
- Knowledge of programming interactive platforms, including augmented reality.
- Interest in women's safety in public spaces.
- Good written and oral communication skills
- Strong motivation, with evidence of independent research skills relevant to the project
- Good time management

Desirable attributes:
- Knowledge of procedural audio synthesis techniques.
- Experience in user interface design.
- Knowledge of microprocessors.
- Familiarity with ethics and data protection procedures.
- Experience in undertaking independent research.
- A completed or near completion MSc in a relevant subject area.

Indicative Bibliography	All-Party Parliamentary Group (APPG) for UN Women. Prevalence and reporting of sexual harassment in UK public spaces, (2021) Retrieved from APPG-UN-Women-Sexual-Harassment-Report_Updated.pdf (unwomenuk.org) Dirin, A., & Laine, T. H. (2018). User experience in mobile augmented reality: emotions, challenges, opportunities and best practices. *Computers*, *7*(2), 33. Fiebig, A., Jordan, P., & Moshona, C. C. (2020). Assessments of acoustic environments by emotions–the application of emotion theory in soundscape. *Frontiers in Psychology*, *11*, 573041. Hermann, T. Hunt, A. Neuhoff, J.G., (Eds), (2011). The Sonification Handbook. Logos Verlag Berlin - Academic Publications in Science and Humanities. Creating safe and empowering public spaces with women and girls. (accessed 26th April 2023) Retrieved from Creating safe and empowering public spaces with women and girls | What we do: Ending violence against women | UN Women – Headquarters Kramer, G., Walker, B., Bonebright, T., Cook, P., Flowers, J. H., Miner, N., & Neuhoff, J. (2010). Sonification report: Status of the field and research agenda. Thulin, S. (2018) Sound maps matter: expanding cartophony, Social & Cultural Geography, 19:2, 192-210, DOI: 10.1080/14649365.2016.1266028 UK Government Equalities Office, 2020 Sexual Harassment Survey. (2020) retrieved from [Title] (publishing.service.gov.uk)

	YouGov / BBC Poll. Results Women's Safety Survey (2022) Retrieved from Survey Report (yougov.com)
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Web page	https://www.napier.ac.uk/research-and-innovation/research-degrees/application-process