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| **Job Title:** | Assistant Programme Director, IN-CYPHER |
| **Department/Division/Faculty:** | Imperial Global Singapore |
| **Campus location:** | Imperial Global Singapore 1 CREATE Way #11-01, CREATE Tower Singapore 138602 |
| **Salary:** | $9,000 to $14,000 Monthly |
| **Responsible to:** | IN-CYPHER Programme Co-Directors  Imperial: Professor Anil Bharath  NTU: Professor Liu Yang |
| **Line Management responsibility for:** | No direct reports, but responsible for supporting management of IN-CYPHER Research Fellows with Programme Directors and Theme leads (14 people) |
| **Key Working Relationships (internal):** | IN-CYPHER researchers, Collaborators within Imperial College London, Collaborators within Nanyang Technological University |
| **Key Working Relationships (external):** | As identified within the Singapore Healthcare, Governmental, Cybersecurity and Startup Ecosystem |
| **Contract type:** | Full time Fixed Term April 2024 – December 2027 in the first instance (with potential for extension dependent on funding) |

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| **Position is based full-time in Singapore at Imperial Global Singapore at the** [**National Research Foundations Campus for Research Excellence and Technological Enterprise (CREATE)**](https://www.create.edu.sg/) **located on the campus of the National University of Singapore.**  **Purpose of the Post**  [Imperial College London](https://imperialglobalsingapore.sage.hr/recruitment/positions/www.imperial.ac.uk) and [Nanyang Technological University (NTU)](https://imperialglobalsingapore.sage.hr/recruitment/positions/www.ntu.edu.sg) are seeking an Assistant Programme Director for the [Imperial/NTU CYber Protection for HEalthcaRe (IN-CYPHER)](https://www.imperial.ac.uk/research-and-innovation/imperial-global-singapore/in-cypher/) research programme on the cybersecurity of connected medical devices and systems. The research programme represents a collaboration between the United Kingdom and Singapore and will be based at the newly established Imperial Global Singapore (IGS) as National Research Foundations [Campus for Research Excellence and Technological Enterprise (CREATE)](http://www.create.edu.sg/) located on the campus of the National University of Singapore. This senior role will be responsible for leading the coordination of the IN-CYPHER research team, working across the themes in collaboration with the Programme Co-Directors.  IN-CYPHER is comprised of four interacting themes, spanning the design of intelligent medical devices through to the use of their data in informing personalised healthcare. Allied to other programmes in Singapore and the UK, it represents a unique opportunity to be at the forefront of research and development into securing the vital information that flows between implantable, wearable and connected medical devices, including those currently in use, and those yet to be developed. The four themes of IN-CYPHER are:  **Theme 1 Protecting Implantable Devices**  Implantable and wearable medical devices – including both sensors and active devices – operate under strong design constraints. Our research in this area seeks to embed secure design from first principles, and at the most fundamental levels (silicon or substrate) of device design; we also recognise the need to consider the challenge of post-quantum cryptographically secure techniques in the immediate future.  **Theme 2 Securing Connected Wearables & Healthcare Systems**  Increasingly, medical devices incorporate some form of connectivity, and many of these devices are necessarily designed to be in use for between one and two decades. There is a constant risk of exploit of zero-day vulnerabilities, and therefore a requirement to detect breaches in extremely intricate complex networks and data flow pipelines. We seek solutions to this challenge that embed security at hardware level.  **Theme 3 Algorithms for Privacy, Security and Provenance**  To control active medical devices – such as closed-loop drug-delivery systems – information moves from sensors and devices along different communications channels; data provenance and integrity are important. Moreover, the use of data-driven algorithms potentially exposes protected patient characteristics, presenting specific technical challenges not only within operational use, but also to product development cycles.  **Theme 4 Clinical Innovation & Translation**  One area of personalised medicine resides in the use of data for closed-loop drug delivery, including insulin delivery. With key researchers and teams from both Lee Kong Chian School of Medicine and Imperial College Healthcare NHS Trust, we seek to develop threat models that are suitable for emerging approaches to personalised medicine, and particularly where data-driven techniques might offer improvements to patient outcomes.  Given the span of the IN-CYPHER programme, we are looking to build up an interdisciplinary team of highly motivated engineers, scientists, and researchers to represent the founding team of the IN-CYPHER programme. The Assistant Programme Director will be tasked with leading the coordination of this team working across the themes in collaboration with the Programme Co-Directors.  The collaborating Departments include senior academics from the [Department of Metabolism, Digestion and Reproduction](https://www.imperial.ac.uk/metabolism-digestion-reproduction/) and the [Department of Bioengineering at Imperial](https://www.imperial.ac.uk/bioengineering/) – the largest Biomedical Engineering Department in the UK – and senior researchers from the [School of Computer Science and Engineering (SCSE)](https://www.ntu.edu.sg/scse/home), [School of Electrical and Electronic Engineering](https://www.ntu.edu.sg/eee) and the [Lee Kong Chian School of Medicine](https://www.ntu.edu.sg/medicine) at Nanyang Technological University. Candidates will be employed by Imperial Global Singapore, a research division of Imperial College London, consistently ranked within the top 10 of the QS University Rankings. Candidates must be resident and based in Singapore, but there will be opportunities for research visits to Imperial’s London-based locations.  Informal enquiries are greatly welcome. You are encouraged to send an e-mail to Professor Anil Bharath [a.bharath@imperial.ac.uk](mailto:a.bharath@imperial.ac.uk).  Questions about the recruitment process, should go to Alex Page, Head of Operations [a.page@imperial.ac.uk](mailto:a.page@imperial.ac.uk). |
| **Key Responsibilities**  The post-holder will be responsible for implementing appropriate management systems and developing the activities of the IN-CYPHER programme, professional administration, and leadership. The post-holder will be required to develop strong working relationships with a range of stakeholders and work independently in the role. They will bring technical knowledge to the programme and work with the researchers to publicise the programme. Based at IGS at CREATE Tower on the National University of Singapore’s campus in Singapore, coordination with Principal Investigators based NTU and Imperial, as well as occasional travel to Imperial College London in the United Kingdom will be required. The successful applicant will:  Management of IN-CYPHER Research Programme (65%)   * Work closely with the programme IN-CYPHER Co-Directors and the broader research team, including principal investigators based at NTU and Imperial College London in both technical and organisational capacity. * Work independently to lead the provision of support for the management and co-ordination of the programme in accordance with the programme plans. * Lead and maintain clear and accurate communications to all programme team members. * Support the recruitment of additional IN-CYPHER team members and their incorporation into the broader programme. * Help identify, support and coordinate spin-off or translation opportunities emerging from research activities. * Lead the development of strategic engagement/partnering objectives and support their implementation. * Lead and organise meetings and coordinate logistical planning for collaborative discussions with support from the IGS administrative team. * Coordinate progress and management meetings as required. * Provide regular appropriate financial and other reporting information, with support from the IGS administrative team to the IN-CYPHER Co-Directors and partner institutions, NTU and Imperial. * Liaise with the other research staff and students working in broad areas of relevance to the research project and partner institutions.   Research (35%)   * Write progress reports and prepare results for annual report publication, press / web releases, presentations. * To attend progress and management meetings as required and network with the other research groups. * To attend relevant workshops and conferences as necessary.   **Position is based full-time in Singapore at Imperial Global Singapore as** [**National Research Foundations Campus for Research Excellence and Technological Enterprise (CREATE)**](https://www.create.edu.sg/) **located on the campus of the National University of Singapore.**  **Job descriptions cannot be exhaustive and the post holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.**  **Imperial Global Singapore is committed to equality and values diversity.** |

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| **Person Specification** |  |

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| **Requirements**  Candidates/post holders will be expected to demonstrate the following | **Essential (E) /**  **Desirable (D)** |
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| **Education** |  |
| a PhD (or equivalent) in any field of engineering, computer science, applied mathematics, or a closely related discipline; 5 years+ of post-doctoral research in a field allied to one of the themes of the IN-CYPHER Programme | E |
| **Experience** |  |
| Practical experience within a research environment and publication in relevant and refereed journals. | E |
| Previous experience in the higher education sector in a similar or related position(s) or substantial relevant experience in another sector, in either case demonstrating development through involvement in a series of progressively demanding work roles | E |
| Proven leadership skills, including the ability to develop operational plans and coordinate their execution; and experience of introducing new organisational methods, processes and procedures | E |
| Extensive experience in developing and managing financial and other resources including preparing, managing and monitoring budgets and the preparation and analysis of management reports to inform financial and strategic decision-making | E |
| Proven management experience, with the ability to motivate and develop members of their team | E |
| Experienced at contributing at a senior level within organisations | E |
| Experience in communicating with multiple parties in a vibrant and multidisciplinary and multinational environment | E |
| Experience in working in a highly organised manner | E |
| Experience in presenting key issues to senior managers and academic staff | E |
| **Skills & Abilities** |  |
| Highly confident and articulate with outstanding communication and persuasive skills both verbally and in writing | E |
| Demonstrated ability to work in a collaborative environment | E |
| Ability to transfer skills and knowledge to colleagues effectively |  |
| Demonstrated ability to develop and apply new concepts | E |
| A creative approach to problem-solving | E |
| Excellent organisational and time management skills, ability to prioritise and multi-task | E |
| Ability to produce clear, concise and accurate written materials | E |
| Highly motivated and willing to take proactive role in forward strategy of IN-CYPHER programme | E |

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| Imperial Global: Singapore is committed to equality of opportunity and to eliminating discrimination. All employees are expected to:   1. Champion a positive approach to change and opportunity 2. Encourage inclusive participation and eliminate discrimination 3. Communicate regularly and effectively within and across teams 4. Consider the thoughts and expectations of others 5. Deliver positive outcomes 6. Develop and grow skills and expertise 7. Work in a planned and managed way   Employees are also required to comply with all IGS policies and regulations, paying special attention to:   |  |  |  | | --- | --- | --- | | * Confidentiality * Conflict of Interest * Data Protection * Equal Opportunities | * Financial Regulations * Health and Safety * Information Technology * Smoking | * Private Engagements and Register of Interests * The regulations of CREATE Tower and of Singapore |   They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](http://www3.imperial.ac.uk/safety/policies/organisationandarrangements) page. |

*IGS observes the San-Francisco Declaration on Research Assessment (DORA),* *which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published.*

*IGS believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes where their use is shown to be necessary for developing new treatments and making medical advances. IGS is committed to ensuring that, in cases where this research is deemed essential, animals are treated with full respect, and that any and all staff involved with this work show due consideration at every level. For further details, applicants are directed to:*

[*http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research*](http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research)/