The Institute of High Performance Computing (IHPC) was established in April 1998 to provide leadership in high performance computing as a strategic resource for scientific inquiry and industry development. As a member institute of Singapore’s Agency for Science, Technology and Research (A*STAR), our mission is to advance science and technology, and develop leading edge applications through high performance computing and computational science.

We are seeking highly motivated individuals capable of working independently yet cohesively as a team in the pursuit of state-of-the-art work with high demands on technical flair and a knack for innovative solutions to various problems. The successful candidate will join an enthusiastic and collaborative social computing team in an excellent scientific and engineering environment. Strong candidates will enjoy opportunities in leading the development of specific capability areas. If you share our interests in building large-scale systems, solving challenging problems using data analytics methods, mathematics and engineering techniques, we welcome you to apply for the following positions:

**SOCIAL AND COGNITIVE COMPUTING DEPARTMENT**

*Research Engineer (Music Technology / Music Cognition)*

We seek research engineers to design, develop and deliver demonstration platforms and large-scale, complex enterprise solutions. You will be part of a core team driving the translation of research IPs into industrial applications.

As we further the R&D effort, we seek to discover new computational techniques for exploring music technology and music cognition, in conjunction with a strong base in behavioral and social sciences. The candidate would contribute to projects at the intersection of music technology and health/therapy (for motor and cognitive rehabilitation and preventive healthcare for the elderly), or music cognition and AI (e.g., implementing neural networks and deep learning to simulate human music perception). We are especially interested in candidates who have experience with either motion capture technology (e.g., the Kinect system) or app development. Knowledge or research experience of music is a plus.
Successful candidates will assume the responsibility as research engineers in developing and testing software systems/applications, commonly in the forms of Software Development Kit (SDK) and Application Programming Interface (API).

You will be required to:

- Work with research teams & external users to develop business/technical requirements.
- Work with development team to translate design into manageable modules for development.
- Identify software components & design patterns for reuse.
- Lead development team to deliver on schedule, according to quality and development standards.
- Manage releases of the solution/product and plan for product improvement roadmap.
- Understand existing research IPs, market needs/trends and technology landscape so as to identify potential translation opportunities.

**Requirements**

- A Bachelor or Master’s degree in Information Systems / Computer Science / Computer Engineering / Software Engineering/ Machine Learning or equivalent.
- Good research track record and practical experience in one or more of the following disciplines: **music technology, app development, music information retrieval (MIR), motion detection technology (such as Kinect or Leap Motion), music & machine learning**
- Proficiency and hands on experience in software and data systems development languages, tools and frameworks, including but not limited to Java, C, C++, SQL, etc.
- Web layer programming skills in HTML, Java, Javascript, Perl and/or Python are essential.
- Experience in Web application server (such as Apache, Tomcat) and browser based application a plus
- Experience in SCM (Software Configuration Management) tools, such as Git, Maven, etc, a plus
- Experience in Javascript framework for both backend and front-end, such as Nodejs, jQuery, is an added advantage
- Interest and ability in learning new related skills and interest in applied research is an added advantage
- A good eye for visual aesthetics and user interface design is an added advantage.
- Good interpersonal and communication skills.
- Highly motivated, team player, able to work under tight schedule. Innovative and ability to work with people from diverse background.
To apply, please email your cover letter and resume to:
Dr. Kat Agres at kat_agres@ihpc.a-star.edu.sg

We regret that only shortlisted candidates will be notified.

IHPC Values :: Impact :: Honesty :: Performance :: Co-operation

SOCIAL AND COGNITIVE COMPUTING DEPARTMENT

Web Development Engineers

We seek web development engineers to design, develop and deliver demonstration platforms and large-scale, complex enterprise solutions. You will be part of a core team driving the translation of research IPs into industrial applications.

You will be required to:

- Work with research teams & external users to develop business/technical requirements.
- Work with development team to translate design into manageable modules for development.
- Identify software components & design patterns for reuse.
- Develop, implement and test web applications leading to on-schedule delivery, according to quality and development standards.
- Develop mobile applications in applied social cognition, including rapid prototyping of algorithms for processing, analyzing and interpreting psychographic and social network data.
- Develop interactive data visualisations.
- Manage releases of the solution/product and plan for product improvement roadmap.
- Understand existing research IPs, market needs/trends and technology landscape so as to identify potential translation opportunities.

Requirements

- A Bachelor or Master’s degree in Information Systems / Computer Science / Computer Engineering / Software Engineering or equivalent.
- Top-notch programming skills and in-depth knowledge of HTML/CSS/JavaScript
- Familiarity with at least one of the following programming languages: Java, JavaScript or Python
- A solid understanding of how web applications work including security, session management
- Aggressive problem diagnosis and creative problem solving skills
• Ability to work and thrive in a fast-paced environment, learn rapidly and master diverse web technologies and techniques
• A good eye for visual aesthetics and user interface design is an added advantage.
• Good interpersonal and communication skills.
• Highly motivated, team player, able to work under tight schedule. Innovative and ability to work with people from diverse background.

To apply, please email your cover letter and resume to Francis Tan at francis-tan@ihpc.a-star.edu.sg

We regret that only shortlisted candidates will be notified.

IHPC Values :: Impact :: Honesty :: Performance :: Co-operation

SOCIAL AND COGNITIVE COMPUTING DEPARTMENT

Research Engineers

We seek research engineers to design, develop and deliver demonstration platforms and large-scale, complex enterprise solutions. You will be part of a core team driving the translation of research IPs into industrial applications.

As we further the R&D effort, we seek to discover new computational techniques for understanding and predicting nuanced human expressions, such as expression of humor, in conjunction of a strong base in behavioral and social sciences.

Successful candidates will assume the responsibility as research engineers in developing and testing software systems, commonly in the forms of Software Development Kit (SDK) and Application Programming Interface (API).

You will be required to:
• Work with research teams & external users to develop business/technical requirements.
• Work with development team to translate design into manageable modules for development.
• Identify software components & design patterns for reuse.
• Lead development team to deliver on schedule, according to quality and development standards.
• Manage releases of the solution/product and plan for product improvement roadmap.
• Understand existing research IPs, market needs/trends and technology landscape so as to identify potential translation opportunities.
**Requirements**

- A Bachelor or Master’s degree in Information Systems / Computer Science / Computer Engineering / Software Engineering or equivalent.
- Proficiency and hands on experience in software and data systems development languages, tools and frameworks, including but not limited to Java, C, C++, SQL, etc.
- Web layer programming skills in HTML, Java, Javascript, Perl and/or Python are essential.
- **Experience in Web application server (such as Apache, Tomcat) and browser based application**
- **Experience in SCM (Software Configuration Management) tools, such as Git, Maven…etc.**
- **Experience in Linux platform, such as CentOS.**
- **Experience in Database, such as MySQL**
- **Experience in Javascript framework for both backend and front-end, such as Nodejs, jQuery, is an added advantage**
- **Interest and ability in learning new related skills and interest in applied research is an added advantage**
- A good eye for visual aesthetics and user interface design is an added advantage.
- Good interpersonal and communication skills.
- Highly motivated, team player, able to work under tight schedule. Innovative and ability to work with people from diverse background.

To apply, please email your cover letter and resume to Francis Tan at francis-tan@ihpc.a-star.edu.sg
Dr. Victor Tong Joo Chuan at tongjc@ihpc.a-star.edu.sg

We regret that only shortlisted candidates will be notified.

IHPC Values :: Impact :: Honesty :: Performance :: Co-operation

---

**SOCIAL AND COGNITIVE COMPUTING DEPARTMENT**

**Research Assistant/Ethnographer**

We are looking for individuals with the relevant traits and experience to work in a multi-disciplinary team. The working environment is dynamic and energetic. Individuals who thrive in taking on responsibilities, initiatives, and enjoy deliberation and experimentation in a team that is motivated to serve the needs of our clients is welcome to apply. Our clients are mainly from the social and healthcare sectors. If you have a passion to serve and improve the quality of life of our clients, it will help to provide greater meaning to your involvement in the work.
Responsibilities:

- In conjunction with other research staff, the RA/Ethnographer primary responsibility will be to work with research partners to recruit and interview participants, conduct fieldwork, design and prepare interview questions, maintain field notes and memos, code and analyze qualitative and/or quantitative data.
- Work with the Principal Investigator (PI) and Field Supervisor to assure ethnographic data is coordinated with other data collection protocols. Ensure compliance to regulatory requirements in data gathering, management and sharing and record keeping.
- Assist PI in library and on-line research for similar study, including interview techniques, design of study, assessment methods and type of questionnaires.
- Assist in the development of research protocols for data collection.
- Facilitate the outreach, recruitment, follow-up, and retention of research subjects.
- Identify relevant profiles of participants and the composition of participants with partner(s) in line with the study objectives.
- Maintain up-to-date confidential subject contact logs and locator information data.
- Assist other project researchers in subject recruitment and conducting ethnographic research. These activities include: in-depth interviewing, data collection from other existing resources, and maintaining relationships built with a variety of community members.
- Prepare and organize qualitative and quantitative data for analysis. Assist the PI with writing proposal and reports.
- Conduct participants briefing and / or training if necessary as part of pre-preparation for the study.
- Be an active member of the research project including attending training sessions on relevant study procedures and protocols.

Requirements

- Bachelor's degree in any of these fields: sociology, social work, psychology, communication that place a strong emphasis on socio-behavioural research projects and research methodology required.
- Strong verbal and written communication skills. Conversant in local dialects, Malay or Tamil is an added advantage.
- Familiar with qualitative research methods.
- Strong organizational skills. Ability to draw out participants, make them comfortable in conversations without feeling they are being interviewed, building rapport with both participants and partner(s) is critical to the success of this role. Must enjoy meeting people.
- Ability to develop strong and cooperative working relationships with local community-based organisations in social and healthcare sector.
• Ability to work with a high degree of autonomy within the research team
• Experience and training using qualitative/ethnographic.
• Need to travel extensively to different community to conduct research. May need to work on weekend or after office hour.
• 1 to 3 years related research experience. Work and/or research experience in community or healthcare sector is preferred.

To apply, please email your cover letter and resume to Dr. Irene Lin at linhan@ihpc.a-star.edu.sg

We regret that only shortlisted candidates will be notified.

IHPC Values :: Impact :: Honesty :: Performance :: Co-operation

SOCIAL AND COGNITIVE COMPUTING DEPARTMENT
(SOCIAL INTELLIGENCE GROUP)

Research Engineers (Research Assistance, Behavioral and User Studies)

The Social Intelligence group focuses on designing new socially intelligent systems and methods that enhance the understanding of public and consumer sentiment, preference, and behaviors. As we further the R&D effort, we seek to discover new computational techniques for understanding and predicting nuanced human expressions, such as expression of humor, in conjunction of a strong base in behavioral and social sciences.

The candidate will assist in research activities including literature review, knowledge construction, annotation, data collection, data analysis and/or facilitation of running behavioral and user studies. The staff will also work very closely with lead scientists, peer research engineers, collaborators and experts from academia and industry.

Requirements
• A Diploma, Bachelor or Master’s degree in Psychology / Arts and Humanities / Communication / Marketing Science / Social Sciences / Information Systems or equivalent
• Native or proficient level of English in speaking and writing
• Demonstrate ability of logical thinking, analytical skills, reporting and presentation skills
• Hands-on experiences and medium to expert level of knowledge with Microsoft Excel and Word
• Interest in research and further studies, knowledge and experiences with analytic tools and programming languages, are not compulsory but will be an advantage

Both fresh graduates as well as experienced professionals with related experiences are welcome to apply.

To apply, please email your cover letter and resume to Dr. Yang Yinping at yangyp@ihpc.a-star.edu.sg

We regret that only shortlisted candidates will be notified.

IHPC Values :: Impact :: Honesty :: Performance :: Co-operation

---

**Job Description**

**Designation: Engineer**

Trampolene Ltd. is a not-for-profit, independent spinoff from the Agency for Science, Technology and Research (A*STAR). We operate as a startup with a core R&D focus on addressing social-sector issues. We invent solutions to bring about positive impact to the lives of the underprivileged, disadvantaged and vulnerable.

The Engineer will be primarily involved in a project that investigates how Barrier-Free Accessibility (BFA) can be improved for persons with physical disabilities. The project emphasizes the use of large-volume, passive, quantitative data streams collected by connected environmental-sensory devices to ascertain fine-grained ground accessibility.

We believe strongly in developing human capital. The Engineer will be constantly challenged to grow in his/her professional competencies and capabilities, and also be groomed as a servant-leader in tackling social issues with science and technology.

The Engineer will play a role loosely-similar to that of a “full-stack” web developer.

The Engineer will play a lead role in the following:
- Designing and implementing a reliable data-store and data-management methodology
- Designing and implementing a robust and scalable REST backend for the serving of data
- Designing and implementing a GIS-based web frontend for the visualization of ground accessibility
- Manage both iOS and Android app-development vendors to deliver full-featured BFA route advisory apps intended for use by persons with physical disabilities
- Actively engage and solicit the needs and wants from all stakeholders (volunteers, users, other contributors, etc.) involved the project

The Engineer can also expect ample opportunities in taking on larger roles and responsibilities in tandem with his/her professional growth.

<table>
<thead>
<tr>
<th>Job Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualification &amp; Field of Study</strong></td>
</tr>
<tr>
<td>- Diploma, Degree or Masters in any computer-science or computer-engineering related field.</td>
</tr>
<tr>
<td>- Exceptional candidates without formal instruction, but possess demonstrable web/systems development skills are strongly encouraged to apply</td>
</tr>
<tr>
<td><strong>Min. Years of Experience</strong></td>
</tr>
<tr>
<td>- Preferably 1-2 years of working experience in commercial/professional web/systems development, but exceptional fresh graduates that can demonstrate strong web/systems development skills are encouraged to apply</td>
</tr>
<tr>
<td><strong>Other Requirements (e.g. Skills, Competencies)</strong></td>
</tr>
<tr>
<td>- The Engineer must have a strong desire and passion to use his/her professional skills to serve and make a difference to the community</td>
</tr>
<tr>
<td>- The Engineer must be personable, and work well in teams</td>
</tr>
<tr>
<td>- The Engineer must be responsible, independent and comfortable with executing broad strategies and visions, without requiring micro-management or close supervision</td>
</tr>
<tr>
<td>- The Engineer must be open to self-learning new software languages, frameworks or development paradigms as necessary</td>
</tr>
</tbody>
</table>

Please send CVs to:

Dr. Huiguang Liang  
Vice President, *Trillion Node Network* Division  
hliang@trampolene.org
**Job Description**

**Designation: Scientist**

Trampolene Ltd. is a not-for-profit, independent spinoff from the Agency for Science, Technology and Research (A*STAR). We operate as a startup with a core R&D focus on addressing social-sector issues. We invent solutions to bring about positive impact to the lives of the underprivileged, disadvantaged and vulnerable.

The Scientist will be primarily involved in a project that investigates how Barrier-Free Accessibility (BFA) can be improved for persons with physical disabilities. The project emphasizes the use of large-volume, passive, quantitative data streams collected by connected environmental-sensory devices to ascertain fine-grained ground accessibility.

We believe strongly in developing human capital. The Scientist will be constantly challenged to grow in his/her professional competencies and capabilities, and also be groomed as a servant-leader in tackling social issues with science and technology.

The Scientist will play a lead role in the following:

- Designing and implementing machine learning-based data-processing algorithms to ascertain ground accessibility based on raw, multi-modal sensory data from the environment (e.g. from real-time accelerometer readings to some measure of accessibility)
- Designing and implementing real-time, on-demand route-finding and route-computation algorithms and methodologies
- Implementing/integrating visualization frameworks and toolkits into GIS-based web/mobile app front-ends
- Designing and implementing strategies for user-centric GIS-based visualizations of accessibility
- Actively engage and solicit the needs and wants from all stakeholders (volunteers, users, other contributors, etc.) involved the project

The Scientist can also expect ample opportunities in taking on larger roles and responsibilities in tandem with his/her professional growth.

**Job Requirements**

<table>
<thead>
<tr>
<th>Qualification &amp; Field of Study</th>
<th>Ph.D. in any computer-science or engineering-related field.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exceptional candidates (with Masters or Bachelors) that have the requisite range and depth of technical competencies are welcome to apply</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Min. Years of Experience</th>
<th>Fresh/Recent Ph.D. graduates are welcome to apply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exceptional candidates (with Masters or Bachelors) that can demonstrate advanced technical competencies in both the background theory and practice of signal-processing/machine-learning/routing optimization are welcome to apply</td>
</tr>
</tbody>
</table>
Other Requirements (e.g. Skills, Competencies)

- The Scientist must have a strong desire and passion to use his/her professional skills to serve and make a difference to the community
- The Scientist must be personable, and work well in teams
- The Scientist must be responsible, independent and comfortable with executing broad strategies and visions, without requiring micro-management or close supervision
- The Scientist must be open to self-learning new scientific methodologies, computational frameworks or software development skills as necessary

Please send CVs to:

Dr. Huiguang Liang
Vice President, *Trillion Node Network* Division
hliang@trampolene.org