Research Fellow (Discrete-event Simulation / Deep Reinforcement Learning / Pharmaceutical Production) - FHK2
Singapore Institute of Technology

Job Title	Research Fellow (Discrete-event Simulation / Deep Reinforcement Learning / Pharmaceutical Production) - FHK2
Department	Chemical Engineering and Food Technology
Institution	Singapore Institute of Technology Singapore, , Singapore
Date Posted	Nov. 27, 2023
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Research Scientist/Associate
Academic Field(s)	Chemical/Petroleum
Job Website	https://careers.singaporetech.edu.sg/cw/en/job/498557/research-fellow-discreteevent-simulation-deep-reinforcement-learning-pharmaceutical-production-fhk2
Apply By Email	
Job Description	

Research Fellow (Discrete-event Simulation / Deep Reinforcement Learning / Pharmaceutical Production) - FHK2

Job no: 498557
Department: Chemical Engineering and Food Technology
Contract type: Contract
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As a University of Applied Learning, SIT works closely with industry in our research pursuits. Our research staff will have the opportunity to be equipped with applied research skill sets that are relevant to industry demands while working on research projects in SIT.

This role is funded by a Pharma Innovation Programme Singapore (PIPS) research grant. The primary responsibility of the role is to deliver a novel software solution, which supposedly will run on discrete-event simulation (DES) and deep reinforcement learning (DRL) algorithms, to help pharmaceutical companies setup and optimize their multi-product manufacturing process in a more agile manner. To this end, you will:
- develop and validate the DES model libraries, which will cover the full supply chain of pharmaceutical production
- setup the DES model optimizer using DRL algorithms
- demonstrate the utility against company-supported use cases
- prepare a user manual to help the companies quickly grasp the knowledge to use or modify the novel utility

Key Responsibilities:

1. Participate in and manage the research project with Principal Investigator (PI), Co-PI and the research team members to ensure all project deliverables are met.
2. Undertake these responsibilities in the project:
   i. Train and validate the DES models using data provided by the pharmaceutical companies, or synthetic data
   ii. Setup the DES model optimizer by implementing appropriate DRL algorithms and objective functions (e.g., CAPEX/OPEX, sustainability metrics, etc.)
   iii. Present research findings in meetings with PIPS member companies; prepare peer-reviewed publications on the findings
   iv. Prepare minutes for project review meetings with PIPS member companies
   v. Engage and communicate with vendors/suppliers for purchasing software, and visit vendors' facilities for both software evaluation and training purpose.
3. Carry out Risk Assessment, and ensure compliance with Work, Safety and Health Regulations.

Job Requirements:

1. PhD in Chemical Engineering, Computer Science / Engineering or related fields. Master's degree candidates with significant computational research experience may also be considered.
2. Previous experience with DES and/or deep learning using neural networks / DRL / AnyLogic

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platform would be advantageous.
3. Interest and enthusiasm for academic research to be applied in the pharmaceutical industry.
4. Good interpersonal, communication and technical writing skills. Good problem-solving skills.

Apply now
Advertised: 27 Nov 2023 Singapore Standard Time
Applications close: 31 Dec 2024 Singapore Standard Time

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Singapore