

PROJECT DARWIN

Enabling Agentic AI Workflows for Supercomputing-Empowered Scientific Research



How To Apply

Send your CV, academic transcript and a brief introduction to recruit@nscg.sg with the subject line: **Internship Application - [Your Name] [Project Title]**

Please include your intended internship period within the email. Our team will be in touch with shortlisted candidates.

The Challenge

The National Supercomputing Centre (NSCC) Singapore manages Singapore's national high performance computing (HPC) resources, a critical asset that drives the advancement of cutting-edge research, technology, and innovation.

As AI evolves into Agentic Systems—capable of reasoning, using tools, and executing multi-step tasks—there is a massive opportunity to accelerate complex scientific workflows. However, researchers face significant technical overhead and security hurdles when trying to integrate these advanced AI patterns into their projects.

We aim to build a foundational environment that allows researchers to seamlessly and securely transition their manual, iterative processes into AI-assisted workflows.

What You Will Do

You will play a key role in architecting our Agentic AI initiative, building the platform that enables scientists to easily deploy AI agents. Depending on your skills and the project phase, you will focus on:

- **Agentic Infrastructure:** Evaluate and deploy state-of-the-art AI agent frameworks tailored for a secure supercomputing environment. You will design an integration layer that allows AI agents to interact with our compute resources while strictly enforcing human-in-the-loop validation and security guardrails.
- **Workflow Pilot:** Collaborate with us to identify a real-world scientific use case—such as an iterative simulation loop or automated data synthesis. You will build a Proof of Concept (POC) demonstrating how this workflow can be transformed into an AI-assisted, semi-autonomous agent, focusing on usability and low-overhead integration for the end user.

What You Will Deliver

A functional development environment (sandpit) and a working POC of an AI-assisted scientific workflow. Your architectural blueprint will provide the framework for how NSCC empowers researchers to deploy secure, high performance AI agents at scale.

Required Qualifications

- Currently pursuing a degree in Computer Science, Artificial Intelligence, Software Engineering, or a related field
- Strong proficiency in **Python** and experience integrating RESTful APIs
- Hands-on experience working with Large **Language Models (LLMs)** and prompt engineering
- Understanding of modular software design and building functional proof-of-concepts

Bonus / Preferred Skills

- Experience with AI agent frameworks (e.g. LangChain, AutoGen, LlamaIndex)
- Familiarity with containerisation technologies (e.g. Docker, Singularity/Apptainer)
- An interest in cybersecurity and implementing secure "human-in-the-loop" guardrails for AI applications