QUEEN’S UNIVERSITY OF BELFAST COMPUTER SCIENCE

Minute of Project Supervision Meeting

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Student Attendee Names: Debdal Chowdhury

Project Module Code: CSC3002

Project Supervisor: Pantelis Sopasakis

Meeting Number: 01

Date of Meeting: 02/10/2024

Progress since last meeting, and decisions arrived at during meeting:

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* First meeting, broken down high level objective – Solve Navier-Stokes Equation, into broad sub-objectives:
  + To write a CUDA Numerical Simulator for PDEs
  + Verify solution + Benchmark in terms of runtime on a GPU using CUDA
* Preliminaries:
  + Familiarise with PDEs, solve some very simple PDEs.
  + Familiarise with Numerical methods (especially Crank-Nicolson) and solve simple PDEs in Python
  + Learn CudaC and familiarise with the cuBLAS library from Nvidia. (Eg: solving linear systems, write a simple CUDA kernel)
* Plan:
  + Write down exact Navier-Stokes equations to solve: PDE and boundary conditions
  + Sketch your Numerical method on paper
  + Design structure/API of software
  + Development Plan (Pipeline, Test Plan, Order of Implementation)
  + Literature Review:
    - Has anybody else done this
    - Criticism, Merits, Limitations, etc.
    - How will your work compare to existing ones.

Action Points:

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* Gantt Chart- Tasks, Milestones Table of Risks
* Go through Chapter 1 and 2 (2.1 to 2.4) in book of LeVeque to start making sense of PDEs and numerical methods to solve them

Date of next meeting:

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Tuesday, 8th of October 2024, 11am

Agreed minute should be initialled by the supervisor.

Supervisor's Initials: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor's Comments:

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