

1 We Are CLusDur



- ◆ **Name:** Edward Andrew Jackson
- ◆ **Department:** Computer Science
- ◆ **Year:** 2
- ◆ **SCC Strengths:** C++, systems administration, hatred of fortran
- ◆ **Cultural background:** British, South African



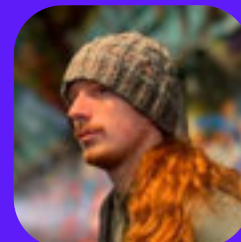
- ◆ **Name:** Charles Dubois-Veltman
- ◆ **Department:** Computer Science
- ◆ **Year:** 3
- ◆ **SCC Strengths:** C++, Kokkos
- ◆ **Cultural background:** French, Dutch



- ◆ **Name:** Michal Pluta
- ◆ **Department:** Computer Science
- ◆ **Year:** 3
- ◆ **SCC Strengths:** C++, bash automation
- ◆ **Cultural background:** Polish



- ◆ **Name:** Christian Keiran Dejelo Barnes
- ◆ **Department:** Computer Science
- ◆ **Year:** 3
- ◆ **SCC Strengths:** C++, GPU programming, HPL tuning
- ◆ **Cultural background:** Filipino



- ◆ **Name:** Oliver Benjamin Turner
- ◆ **Department:** Computer Science
- ◆ **Year:** 3
- ◆ **SCC Strengths:** C++, distributed systems, low level architecture
- ◆ **Cultural background:** German, British



- ◆ **Name:** Nam Hoang Le
- ◆ **Department:** Computer Science
- ◆ **Year:** 3
- ◆ **SCC Strengths:** C++, GPU computing, performance analysis & optimization
- ◆ **Cultural background:** Vietnamese

2 What Makes Us Special

- ◆ ClusDur is committed to never competing with the same team composition twice. This approach allows anyone to participate and provides newcomers the chance to shine.
- ◆ In keeping with this tradition, we present a team where none of the members have ever competed in any IndySCC event. In fact none of us, besides our captain, have had any prior exposure to HPC!
- ◆ While we may lack competition experience, we bring practical, real-world HPC experience. In the summer of 2024, our members gained valuable skills in both research and industry, learning about MPI, GPU computing, and Slurm for scientific applications.

3 Training Infrastructure

- ◆ Hamilton: 15,616 Core HPC system
- ◆ NCC: Departmental NVIDIA GPU cluster
- ◆ DINE: Smart NIC cluster
- ◆ COSMA8: Particle physics, astronomy and cosmology cluster

CLUSDUR GOES
INDYSCC
2024

Members: Edward Andrew Jackson, Charles Dubois-Veltman, Michal Pluta, Christian Keiran Dejelo Barnes, Oliver Benjamin Turner, Nam Hoang Le
Advisor: Tobias Weinzierl

4 Diversity

- ◆ Our team is proud to represent a diverse mix of six nationalities and three ethnicities, highlighting our commitment to inclusivity and the contributions from underrepresented groups in HPC.
- ◆ We are supported by an advisory team of three women:
 - A former IndySCC team member and ClusDur captain
 - An expert in HPC systems setup and maintenance
 - A "Women in HPC" community member who helps train the team
- ◆ Together, our diverse backgrounds and expert guidance allows us to tackle challenges with creativity and skill.

5 Training and IndySCC Strategy

- ◆ Entails parallel programming with OpenMP, MPI, CUDA and oneAPI; shell scripting, git, system administration and HPC environment skills.
- ◆ Students-teach-students approach and intra-team mini challenges to practice for competitions based on pre-announced applications.
- ◆ Use software carpentry workshops and DiRAC's collection of teaching materials for self-paced learning.
- ◆ Each application, benchmark and system administration task is assigned to two team members who tackle it together.
- ◆ Everyone specializes in what they have a keen interest in and share their knowledge with the rest of the team.

6 Supporters

