GPU CENTERS OF EXCELLENCE - CATCH THE VISION

ANDREW E. SCHUH

UNIVERSITY OF ILLINOIS

Personal Introduction

Andrew E. Schuh

University of Illinois

CUDA Center of Excellence

Manager (non-research)

aschuh@illinois.edu

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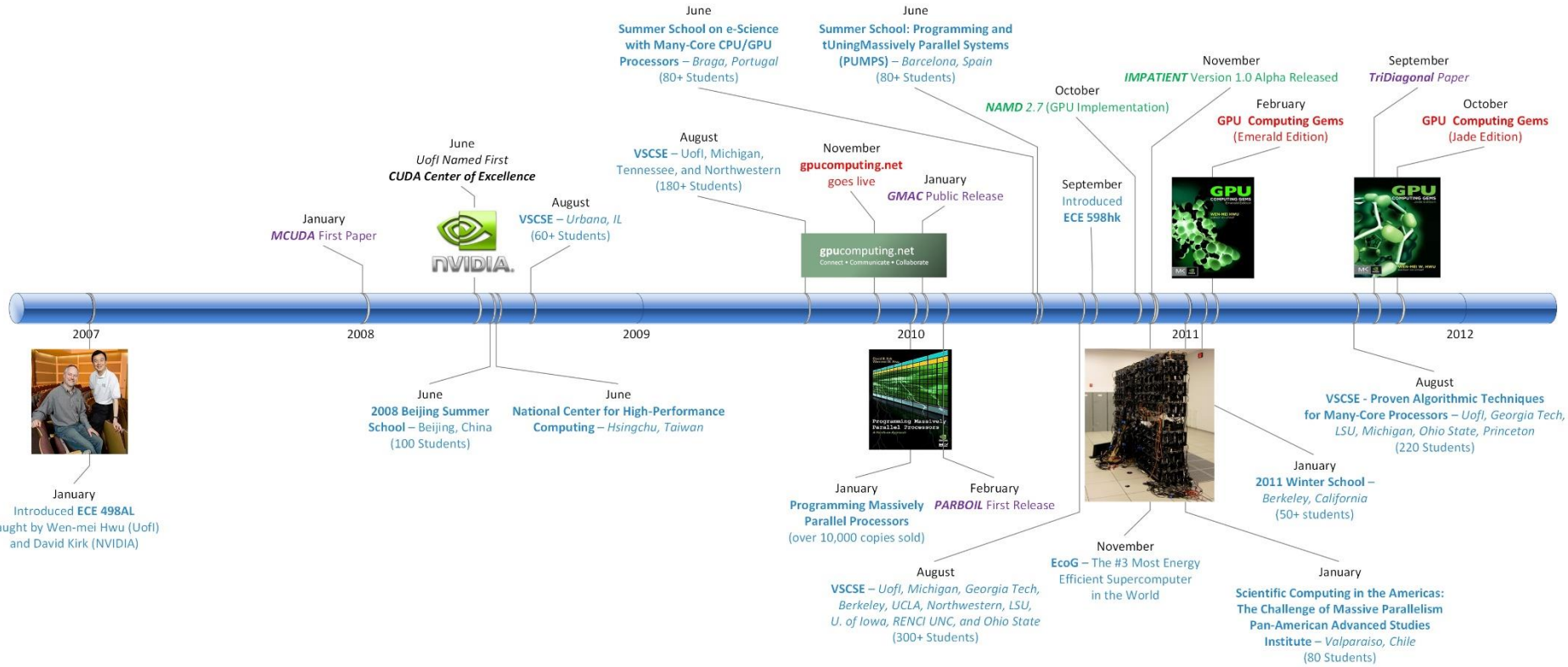
CUDA Center Introduction

2007	• Wen-Mei Hwu and David Kirk collaboratively developed a new Parallel Programming course
2008	• MCUDA first paper published • UIUC named a CUDA Center of Excellence

Timeline (2007 – 2011)



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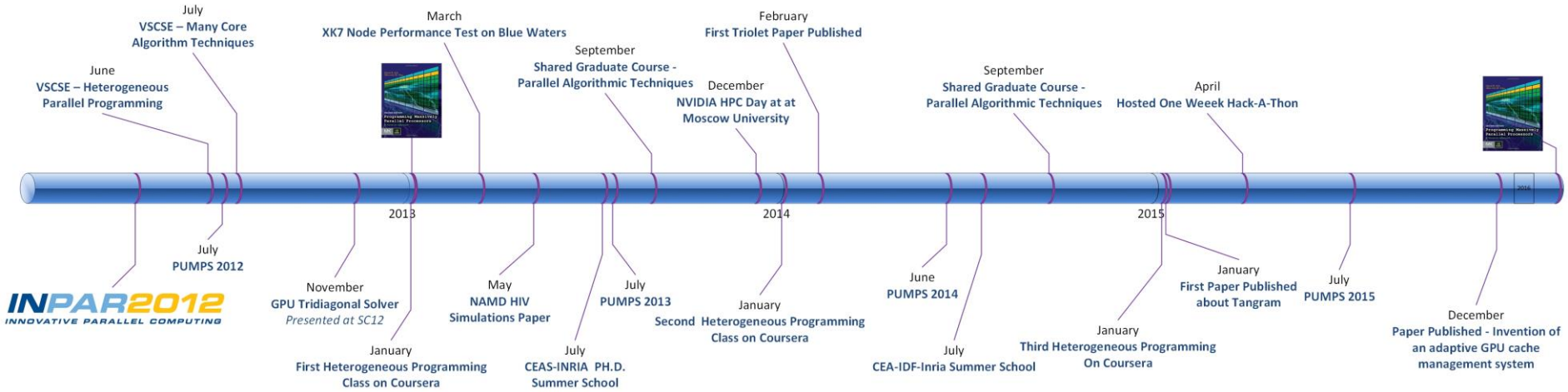
Timeline (2012 – 2015)



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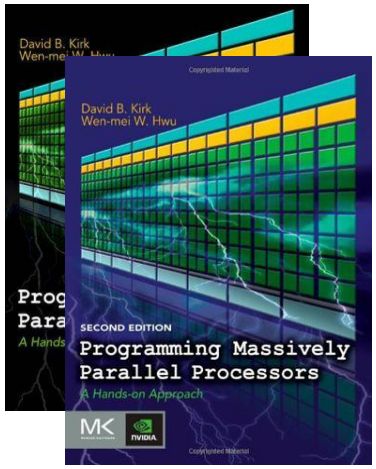
Curriculum Development - Books

- Originally published January 2010
- 2nd Edition published January 2013
- 3rd Edition is in process now to be published in early 2016.
  - Translated to Spanish, Chinese, Russian, Portuguese, Greek, and Japanese.
- In the future … Computational Thinking and Algorithmic Design

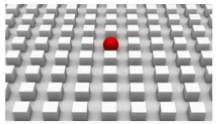


Curriculum Development – Classes & Workshops

- Heterogeneous Parallel Programming class
- Programming Massively Parallel Processors textbook
- Week Workshops
  - VSCSE
  - PUMPS
- University Courses
  - Shared Graduate Course: Parallel Algorithmic Techniques
  - Coursera: Heterogeneous Parallel Programming

ILLINOIS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Heterogeneous Parallel Programming
by Wen-mei W. Hwu



Home / Announcements
Introduction to C

---------- WEEK VIEW ----------
Due Dates
Week #1
Week #2
Week #3
Week #4
Week #5
Week #6
Week #7
Week #8
Week #9

---------- CONTENT VIEW ----------
Discussion Forums
Lecture Videos & Slides
Lab Grades
Quizzes
Survey Summary

Announcements

End of Course Survey

We are winding down the HPP course with the last lab assignment due next week (please note this extension). WebGPU will be turned off in two weeks, giving you time to backup whatever data you would like to keep. Given the active discussions on the forums, we hope that the programming experience was helpful in understanding the material.

If there were any errors with your grade not being correctly posted back to Coursera, please send your WebGPU username, Coursera username, the lab assignment, and the source code to webgpu@gmail.com and we will investigate and correct your grade if warranted. The deadline to request a grade adjustment is April 16. Grades will be posted after this deadline has passed.

Finally, we ask you to take a quick survey on your experience with WebGPU (Survey Link). Your feedback will help us to further improve WebGPU for future course offerings.

HPP Course Staff

Wed 8 Apr 2015 1:55 AM CDT

Free SOA's from University of Illinois Confirmed

The University of Illinois has agreed to issue Illinois Badges of Accomplishment and Distinction. Everyone who passes the class (greater or equal to 70% and less than 90%) will receive a Badge of Accomplishment. Students with a a grade of 90% or greater will receive a Badge of Distinction. We will use the same criteria when determining Coursera verified certificates.

Please note, Illinois badges can be posted on social media such as Linked-In and facebook, the same way as the Coursera Certificates.

We apologize we were not able to confirm until now.

Wed 4 Mar 2015 3:46 PM CST

Welcome

On behalf of the entire teaching staff, I would like to welcome you to the Heterogeneous Parallel Programming Course. While this is a challenging subject, thousands of students succeeded in previous sessions. Our goal is to help even more to succeed in the coming 9 weeks. Before you start, please be sure to review the Course Syllabus to familiarize yourself with all aspects of the course. There are several unique mechanisms in this course to help you to master the concepts and techniques covered.

In particular, we will be using WebGPU to provide all students with a cloud-based, uniform programming lab environment. WebGPU is also the mechanism for automated feedback and grading. Please follow the "Programming Site (Lab)" link in the left column on the course front page to access WebGPU, where you can view the introduction videos, create an account for yourself, connect your WebGPU account to your Coursera account, and take a tutorial tour.

For each assignment, you will see a Due Date and a Hard Due Date. The Due Date is set so that you can keep up with the course. The Hard Due Date of each assignment is set to two weeks after the Due Date to allow for unforeseen circumstances and give you flexibility to work around other demands of your time. From our experience, most students who succeeded in the past operated according to the Due Date schedule and used the Hard Due Date only on an occasional basis.

Upcoming Deadlines

Recent Discussions

Testing account or offline materials needed
Last post by Yun Hsiao Wu (24 days ago)

Graphics card installation
Last post by Vennila Jayavel (a month ago)

System requirement for Programming
Last post by Vennila Jayavel (2 months ago)

Cannot Complie & run Code in WebGPU
Last post by SHUBHAM SINGH (2 months ago)

When will grades be posted and Course Certificate issued
Last post by Jean-Michel Gazagnes (3 months ago)

Browse all discussions »

Admin Help

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- Heterogeneous Parallel Programming class
- Programming Massively Parallel Processors textbook
- Week Workshops
  - VSCSE
  - PUMPS
- University Courses
  - Shared Graduate Course: Parallel Algorithmic Techniques
  - Coursera: Heterogeneous Parallel Programming
  - Nvidia Teaching Kit (preview available mid-September, full course available January 2016)

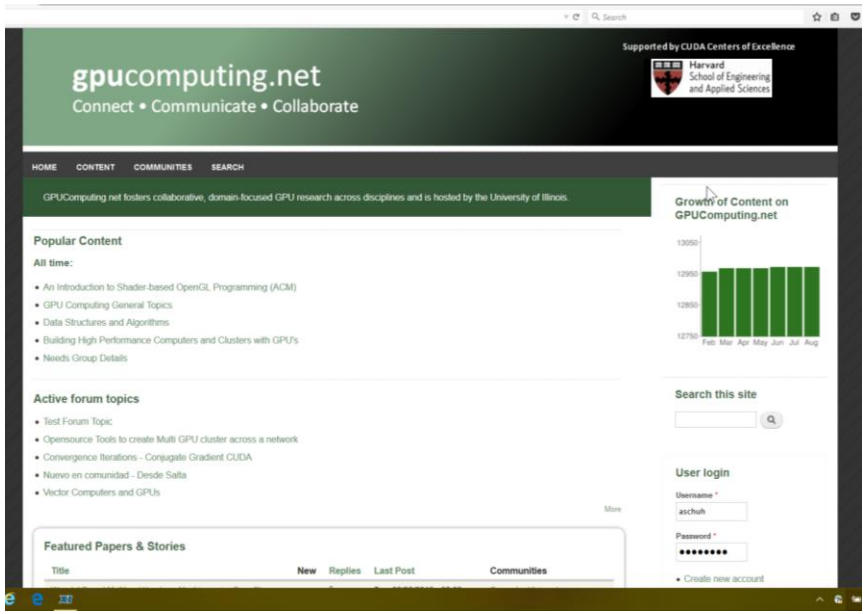
Curriculum Development: NVIDIA Teaching Kit

- Full Semester Class
- Based on Programming Massively Parallel Processors textbook
- Utilizes the EdX framework with videos, quizzes, and programming assignments
- Programming Assignments
  - GPU Compute resources provided online (Amazon)
  - Can also use local GPU resources
- Course content is fully editable
- Currently looking for beta testers

https://developer.nvidia.com/content/cuda-education-information-sign

Academic Engagement

- gpucomputing.net
  - Academic Papers
  - Forums
- Brown Bags
- INPAR2012
  INNOVATIVE PARALLEL COMPUTING



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Research

- Adaptive Cache Management
- Fast ASTA –based Array Transition
- IMPATIENT
- GMAC
- NAMD / VMD
- SPEC GPU
- Tangram
- Tridiagonal Solver
- Triolet
- XMalloc

Academic Programs

NVIDIA GPU CENTER OF EXCELLENCE

GPU Center of Excellence Program

Our highest award recognizing, rewarding and fostering collaboration with universities at the forefront of massively parallel manycore computing research.

NVIDIA GPU RESEARCH CENTER

GPU Research Center Program

Research Institutions doing world-changing research in a particular domain or field by leveraging CUDA and NVIDIA GPUs can apply for the GPU Research Center Program.

NVIDIA GPU EDUCATION CENTER

GPU Education Center Program

The GPU Education Center Program is designed to support and encourage teaching institutions to include GPU Computing using CUDA C/C++ as part of their course offerings.

Hardware Grant Program

Small scale seeding gifts to empower and collaborate with professors and researchers inspiring cutting edge technological innovation through the power of the GPU.

NVIDIA CUDA® FELLOW

CUDA Fellow Program

The CUDA Fellows Program recognizes individuals who are committed to leading the use and adoption of the CUDA architecture and GPU computing.

NVIDIA GRADUATE FELLOW

Graduate Fellowship Program

The NVIDIA Graduate Fellowship Program provides funding to Ph.D. students who are researching topics that will lead to major advances in a number of fields, and are investigating innovative ways of leveraging the power of the GPU.

GPU Center of Excellence

Invited institutions must satisfy three minimal requirements across multiple disciplines:

- Teach: Offer multiple courses on a recurring basis that introduce students to GPU Computing and CUDA C/C++.
- Publish: Demonstrate promising research results and generate academic papers and publication involving GPU Computing in at least 3 separate research laboratories or projects.
- Outreach: Proactively outreach support and influence students, researchers, thought leaders in academia, government and industry to learn and adopt GPU computing, the introduction of CUDA within their region and influence.

THANK YOU

JOIN THE CONVERSATION

#GTC15