Teaching Parallel Programming With CUDA

Mark Ebersole, NVIDIA CUDA Educator
Moore’s Law
Moore’s Law

![Graph showing the relationship between CPU clock speed and year from 1980 to 2010, with a logarithmic scale on the y-axis and a linear scale on the x-axis. The graph illustrates the exponential increase in CPU clock speed over time.]
Udacity Parallel Programming Course

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20,000+ Students Already Taking the course!

IT’S FREE!

Udacity.com
### CUDA Parallel Computing Platform

www.nvidia.com/getcuda

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Introducing CUDA Python
Python Productivity + GPU Performance

Easy to Learn
Powerful Libraries
Popular in New Developers
HPC & Data Analytics

Most Popular Coding Languages of 2013

- C++ 12.6%
- Ruby 9.6%
- Javascript 3.9%
- Python 29.8%
- Java 25.8%
- C# 2.5%
- PHP 7.3%
- Perl 2%
- Objective C 1%
- Scala 6%
- Clojure 0.8%
- TCL 0.02%

Data from CodeEval.com, based on 100k+ code samples
Developer Curriculum

- Site: developer.nvidia.com/cuda-education
  - Mailing list is live!

- Forums for discussion:
  - Education section on: devtalk.nvidia.com
“I think the main problem with getting academia to prepare their students for the parallel world is a lack of understanding by both professors and students as to the significance of parallel thinking to the computing field.” - Susan Imberman, Professor @ CUNY

“There is an inconsistency between the rate of change in technology between industry and academia” - Paul Muzio, Director HPC @ CUNY

“Students find the topics fascinating and topical, and they are better prepared to apply this knowledge when collaborating with their colleagues in other science and engineering disciplines.” - Tim Korb, Professor @ Purdue

“Parallel programming allows you to unlock the full potential of your modern mobile device or computer. Performance improvement of this magnitude (100x+) is about so much more than just 'speeding up' existing applications; it's about uncovering entirely new applications never before possible.” - John Judnich, Graduate from SCU
“What a few years ago was consider High Performance Computing (HPC) programming, only available at a few research institutions, is now desktop/personal computer programming and therefore a basic necessity for our undergraduate students.” - Maria Pantoja, Professor @ SCU