HOT CHIPS 28

ADVANCE PROGRAM

August 21-23, 2016

A Symposium on High-Performance Chips

Flint Center for the Performing Arts-Cupertino,CA

http://www.hotchips.org

HOTCHIPS brings together designers and architects of high-performance chips, software, and systems. The tutorial and presentation sessions focus on up-to-the-minute developments in leading-edge industrial designs and research projects.

Register Now: https://www.123signup.com/register?id=nfkqk

Sunday August 21

Tutorial 1: Using next generation memory technologies: DRAM and Beyond

Memory technologies such as DRAM are rapidly changing from traditional interfaces and DRAM based devices to new interfaces, packages and device technologies. This tutorial will describe new technologies from industry leading memory vendors and show how they are used in new and emerging products and applications. Presenters include speakers from **Micron, SK hynix, Samsung, Xilinx and more...**

Tutorial 2: 3D depth for consumers: From Sensors to Applications

3D depth sensors are becoming increasingly ubiquitous, moving from robots and factories into cars and phones. Learn how sensor manufacturers, vision processing companies and application developers are enabling new depth - powered experiences for consumers. Presenters include speakers from **PMD Tech, Inuitive, Movidius, Google, and more…**

Monday August 22

GPUs and HPC Processors

- The New GPU Architecture and its Initial Implementation — **ARM**
- Ultra-Performance Pascal GPU and NVLink Interconnect — **Nvidia**
- ARMv8 - A Next-Generation Vector Architecture for HPC — **ARM**

Processing on the Go: Mobile Devices

- NVIDIA Tegra - Next System-on-Chip — **NVIDIA**
- Helio X20: The First Tri-Cluster Deca-Core Mobile Application Processor SoC with CorePilot 3 Technology for High-Performance and Power-Efficiency — **Mediatek**
- Samsung's Exynos-M1 CPU — **Samsung**

***Keynote A:* Augmented Reality** Ilan Spillinger, CVP HoloLens Technology and Silicon — **Microsoft**

Energy-Efficient Computing: Low-Power SoCs

- Design and Development of a an Ultra-Low Power x86 MCU Class SoCs — **Intel**
- A Sub-GHz Wireless SoC for Batteryless IoT Applications — **Psikick**

Vision and Image Processing

- Model to FPGA: Software-Hardware Co-Design for Efficient Neural Network Accelleration — **Deephi and Tsinghua**
- The Path to Embedded Vision and AI using a Low-Power Vision DSP — **Ceva**
- High-Performance DSP for Vision, Imaging and Neural Networks — **Cadence**

Tuesday August 23

Interconnects: Microns to Kilometers

- A 16nm 256-bit Wide 89.6GByte/s Total Bandwidth In-Package Interconnect with 0.3V Swing and 0.062pJ/bit Power in InFO Package — **TSMC**
- 100Gbit/s, 120km, PAM 4 Based Switch to Switch, Layer 2 Silicon Photonics based Optical Interconnects for Datacenters — **InPhi**
- Intel Omni-Path 4.8 Tbps Switch ASIC and Platform — **Intel**

Emerging Embedded

- A "Zero-displacement" Active Ultrasonic Force Sensor for Mobile Applications — **Sentons**
- Quantum Dot-Based Imagers for Multispectral Cameras and Sensors — **Invisage**
- Building the World's First Super Active Suspension System — **Levant**

Keynote B: Are We There Yet? Silicon in Self-Driving Cars Daniel Rosenband, Compute Lead, — **Google**

Many-Core Chips

- Piton: A 25-Core Academic Many-Core Processor — **Princeton University**
- KiloCore: A 32 nm 1000-Processor Array — **UC Davis**

Dealing with Big Data

- Embedded Deep Neural Networks: "The Cost of Everything and the Value of Nothing" — **Movidius**
- Software in Silicon in the Oracle SPARC M7 processor — **Oracle**
- SDA: Software-Defined Accelerator for General-Purpose Distributed Big Data Analysis System — **Baidu**

High-Performance Processors

- Inside 6th-generation Intel Core Code-Named Skylake: New Microarchitecture and Power Management — **Intel**
- POWER9: Processor for the Cognitive Era — **IBM**
- A New, High-Performance x86 Core Design from AMD — **AMD**

A Symposium of the Technical Committee on Microprocessors and Microcomputers of the IEEE Computer Society and the Solid-State Circuits Society