Parallel Computer Architecture – Final Schedule (Fall 2020)

Week 1: Introduction + Power Consumption (8-9 Oct)

Week 2: Superscalar Architectures, Scoreboarding (15-16 Oct)

Reading Assignment 1 Announced (16 Oct)

Week 3: Tomasulo & Reorder Buffer (22-23 Oct)

No classes on 29-30 Oct

Simulation Project 1 Announced (28 Oct)

Reading Assignment 1 Due Date (30 Oct)

Week 4: Recitation, Multiple Issue, Memory Accesses (5-6 Nov)

Week 5: Branch Prediction and Speculative Execution (12-13 Nov)

Reading Assignment 2 Announced (13 Nov)

Week 6: Memory Dependences, Putting It All Together (19-20 Nov)

Simulation Project 1 Due Date (20 Nov)

Week 7: VLIW architectures & Multithreading & MIMD (26-27 Nov)

Midterm examination (23-27 Nov)

Week 8: Parallel Programming, Performance Modelling, SIMD (3-4 Dec)

Reading Assignment 2 Due Date (4 Dec)

Week 9: Cache Coherence (10-11 Dec)

Presentation Topics for CS58003 Students Announced (11 Dec)

Simulation Project 2 Announced (13 Dec)

Week 10: Memory Consistency, Transactional Memory (17-18 Dec)

Week 11: Introduction to GPUs & 58003 Presentations (24-25 Dec)

Week 12: Systolic Arrays (31 Dec), **No classes** (1 Jan)

Week 13: 58003 Presentations (7-8 Jan)

Simulation Project 2 Due Date (8 Jan)

Final Examination – Written (28 Jan, 09:00-12:00)

Schedule of CS58003 Presentations

Friday, 25 December 2020

Fatih Taşyaran:
NVIDIA's A100 GPU: Performance and Innovation for GPU Computing (Hot Chips 2020)

Elif Şahin:
Microsoft Xbox Series X System Architecture (Hot Chips 2020)

Amro Fida Alabsi Aljundi:
The Intel Xe GPU Architecture (Hot Chips 2020)

Thursday, 7 January 2021

Abdullah Furkan Okuyucu:
AMD Zen2 Processors (Hot Chips 2019)

Kemal Derya:
No Transistor Left Behind (Hot Chips 2020)

Friday, 8 January 2021

Arda Şener:
Cortex-M55 and Ethos-U55: Arm's Most Capable Processors for Endpoint AI (Hot Chips 2020)

Anes Abdennebi:
Cerebras Wafer Scale Processors for Deep Learning (Hot Chips 2019 & 2020)

Taha Atahan Akyıldız:
Google's Training Chips Revealed: TPUv2 and TPUv3 (Hot Chips 2020)

Ferhat Yaman:
Habana Labs Approach to Scaling AI Training (Hot Chips 2019)