ECE 5775 Project Presentations (12/6/2018)

- Ten projects: 7 apps + 3 tools (10 mins per talk)
  - Stock Market Prediction by Anant, Aasta, Rick, Vidya
  - Smith-Waterman by Nick, Felipe, Mark, Serena
  - SIFT Accelerator by Yixiao, Joyce, Yirong
  - Lattice-Boltzmann Accelerator by Christopher, Nicholas, Julia, Adam
  - A More Accurate BNN by Christina, Juan, Leandro
  - MobileNets using Systolic Array by Neil, Chirag, Darshan, Aman
  - Crypto Accelerators by Drew, Jacob, Alex, Aaron
  - DNN Accelerator Generation Framework by Peitian, Yanghui
  - HLS Estimation with Graph Learning by Zhijing, Chenhui
  - BNN in HeteroCL by Patrick, Yuwei, Shaojie, Yichi

- Submit report and code on Tuesday 12/11

- Please fill out 5775 course evaluation
  - Comments not required but very welcome
Student-Led Discussions: Session 1
Selected “Customer” Reviews

- **Sparse Matrix Vector Multiplication** by Adam, Julia, Nick S.
  This presentation is informative and easy to follow. It discussed what CRS format is and when CSR is useful ... I also learned some challenges in optimizing sparse matrix-vector multiplication, e.g., variable loop bound, and some effective methods, e.g., partial unrolling.

- **Matrix Multiplication** by Nick C., Felipe, Mark, Serena
  Liked the explanation for pragmas where he explained the array partitioning options and the explanation for dataflow pragma along with the use of ping pong buffers. The entire presentation was informative ...

- **Video Systems** by Aaron, Drew, Alex, Jacob
  I think that they tried to make it fun and engaging by asking questions to the class. I also liked that they gave a real world example with guitar hero showing the actual latency

All student remarks are posted on CMS. Check out the grading comments.
Student-Led Discussions: Session 2

- **Insertion Sort** by Zhijing, Christina, Juan, Leandro
  I think you guys were well spoken, clearly explaining your topic starting from basic ideas and then building to the overarching topic.

- **Merge Sort** by Anant, Rick, Aasta, Vidya
  The presentation is clear and easy to follow, especially the slides also included an animation illustrating how the merge sort works. There were few words in the slides, which was friendly to the audience. Each figure in the slides was clear and meaningful...

- **Prefix Sum and Histogram** by Chris, Shaojie, Yanghui, Peitian
  Succinct and clear explanations. The use of prefix sum in array sort helped set the premise. The concept of dependence pragma to tell HLS that there is no hazards was interesting and well explained

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Student-Led Discussions: Session 3

- **Convolution Engine** by Yirong, Joyce, Yixiao
  I personally really like the topic and this group definitely did a wonderful job in presenting it. They extensively used clear diagrams and figures to present the architecture of the convolution engine …

- **Project Brainwave** by Neil, Darshan, Chirag, Aman
  The presentation is clear and easy to follow, especially the slides also included some nice figures illustrating what the brainwave project is about. There were few words in the slides, which was friendly to the audience…

- **Darkroom** by Yuwei, Yichi, Chenhui, Patrick
  A lot of diagrams to aid in comprehension. Great summary of what are the most important points to understand about DSL. A good comparison between HLS and DSL …

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