9 December, 2019

Dear members of the hiring committee,

This letter is written to recommend in the strongest terms Tobias Jeppesen's application for the available positions in your institution/company. I have co-advised Tobias' BSc thesis and I was quite impressed by his independent way of leading his project despite his relatively young academic age.

First, I would like to introduce myself. I have been an associate professor at IT University of Copenhagen (ITU) since February 2018. Prior to ITU, I was a research staff member at IBM Almaden Research Center for three years. Before joining IBM, I received my PhD degree from École Polytechnique Fédérale de Lausanne (EPFL) in November 2014. My primary research focus is on performance characterization of data-intensive workloads, and scalability and efficiency of data-intensive systems on modern processors and storage. My doctoral dissertation received a Jim Gray Doctoral Dissertation Award Honorable Mention in 2016. Throughout my career, I supervised several students (PhD, MSc, and BSc) at the different institutions I have worked at. Therefore, I can assess Tobias' potential as a computer systems researcher or developer quite confidently.

Tobias did his BSc thesis project in our research group at ITU. In his project, he implemented and compared various hardware-conscious algorithms for data partitioning from the research literature. More specifically, he was investigating how to more effectively parallelize data partitioning while taking the topology of the memory hierarchy into account (e.g., non-uniform memory accesses, cache locality, etc.). Data partitioning is an essential preliminary step for many data-intensive tasks such as sorting, joining different datasets, scanning the data for different filtering or grouping operations, etc. Therefore, any optimizations done on partitioning can positively impact many data-intensive applications. Analyzing the behavior of different hardware-conscious methods for this task, as Tobias did in his project, is critical for many systems.

Even though Tobias did not have a strong background in data-intensive systems or computer architecture initially because of his young academic age, he was prompt in figuring out the project details through reading the related academic papers and technical documents. He was pro-active and self-driven in the way he approached the tasks of his project. He was very enthusiastic and independent when it came to writing complex multi-threaded code. He was also very proficient in the way he developed a sound experimental methodology for comparing different algorithms, which is uncommon among BSc students at ITU.

Overall, it was a pleasure to work with Tobias. I strongly believe that he has a great potential to become a very resourceful researcher and developer in the field of computer systems. Please do not hesitate to contact me if you have further questions about him.

Respectfully,

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