Xiangpeng Hao

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EDUCATION

Simon Fraser University, Vancouver, Canada
Bachelor of Science, Computer Science — Sept. 17 - Present

Zhejiang University, Hangzhou, China
Bachelor of Engineer, Computer Science & Technology — Sept. 15 - Present

RESEARCH EXPERIENCE

Research Assistant in Database Group — Dec. 18 - Present
Advised by Tianzheng Wang to research on data-intensive systems and related topics that impacts the design of database systems, especially how persistent memory will impact the database index design.

Teaching Assistant for Operating System — May 19 - Aug. 19
Explaining theory behind modern operating systems to 2nd-year Undergraduate student and guiding them in lab practicals.

Research Assistant in Computer Vision Group — Feb. 18 - Apr. 19
Advised by Brian Funt to research on colour constancy algorithms and related topics that guide the colour constancy research.

PUBLICATIONS

Lucas Lersch, **Xiangpeng Hao**, Ismail Oukid, Tianzheng Wang, Thomas Willhalm. **Evaluating Persistent Memory based Range Indexes.** *45th International Conference on Very Large Data Bases (VLDB 2020)*

Xiangpeng Hao, Brian Funt. **A Multi-illuminant Synthetic Image Test Set.** *IEEE Transactions on Image Processing (IEEE TIP) [under review]*

Xiangpeng Hao, Brian Funt, Hanxiao Jiang. **Evaluating Colour Constancy on the new MIST dataset of Multi-Illuminant Scenes.** *27th Color Image Conference (CIC 2019)*

RESEARCH PROJECTS

High Performance Hash Table with Instant Recovery — Sept. 19
Worked with another PhD student to design and implement a high performance hash table on Intel DCPMM. The performance with our design is more than 50% better than the state-of-the-art hash table's in most cases, and we are the first hash table that supports instant recovery on power failure or system crash.

Open-source BzTree Implementation — May 19
Implemented a fully-functional BzTree in C++ and benchmarked on both main memory and persistent memory. Extended PMwCAS to allow safe allocation, and also extended its API so that PMwCAS can support more real world use cases.

Spectral Renderer — July. 18 - Dec 18
Extended Blender Cycles to allow physically-accurate spectral rendering. It is the first and only rendering engine that supports texture spectral rendering, and it is used to generate physically colour-accurate images that help the computer vision community.

AWARDS

Sciences Undergraduate Research Student Award (VPR) — May 19 - Aug. 19
SFU Undergraduate Open Scholarship
SFU Entrance Scholarship — Sept. 17
China National VEX Competition (Gold medal, captain) — Jul. 15