Xiangpeng Hao

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EDUCATION

Simon Fraser University, Vancouver, Canada
Bachelor of Science (Dual Degree), Computer Science — Sept. 2017 - Present

Zhejiang University, Hangzhou, China
Bachelor of Engineer (Dual Degree), Computer Science — Sept. 2015 - Present

RESEARCH EXPERIENCE

Research Assistant in Database Group — Dec. 2018 - 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 - Aug. 2019
Explaining theory behind modern operating systems to 2nd-year Undergraduate student and guiding them in lab practicals.

Research Assistant in Computer Vision Group — Feb. 2018 - Apr. 2019
Advised by Brian Funt to research on colour constancy algorithms and related topics that guide the colour constancy research.

PUBLICATIONS

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, oral preview (CIC 2019)*

RESEARCH PROJECTS

Dynamic Hash Table on Persistent Memory — Jun. 2019 - Present
Proposed a new approach to build dynamic and scalable hash table on real PM hardware. It achieves scalability by avoiding unnecessary PM access, and can achieve up to 3x better performance than the state-of-the-art.

Evaluation of Persistent Memory based Range Indexes — Dec. 2018 - Present
Provided a comprehensive evaluation of recent persistent index structures. Through empirical evaluation using representative workloads, we identify key, effective techniques, insights and caveats to guide the making of future PM-based index structures.

Open-source BzTree Implementation — Dec. 2018 - May 2019
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. - Dec. 2018
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 - Aug. 2019
SFU Undergraduate Open Scholarship
SFU Entrance Scholarship — Sept. 2017
China National VEX Competition (Gold medal, captain) — Jul. 2015