Richard, Yan Chak Li | C.V.

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born @ 23/04/1995

Research Interest

Computer Vision, Pattern Recognition, Medical Image Analysis, Bioinformatics

Education

Academic Qualifications

- **The Hong Kong University of Science and Technology** — **Hong Kong**
  M.Phil. in Bioengineering , Supervised by Prof. Richard H.Y. So — *2017–now (expected Aug2019)*
- **The Hong Kong University of Science and Technology** — **Hong Kong**
  B.Eng. in Computer Engineering , Minor in Mathematics — *2013–2017*

Notable Projects

- **Masters Thesis (Ongoing):** *'Automatic Vertebral Edge Detection on X-ray images'*
  Supervised by Prof. Richard So, Dept. of CBE IEDA, HKUST
  Most of the clinical diagnosis were carried out manually on X-ray images. Under-diagnosis has been reported due to heavy workload and arbitration in subjective assessments of anterior, middle and posterior vertebrae heights, similarity of adjacent vertebrae, and end-plate disruption, etc. Consequently, an automatic and objective shape measurement of vertebrae is needed to improve clinical diagnosis of vertebral fracture.
- **Undergraduate Research Opportunities Program (UROP)** *'Improving the Efficiency of Spectral Library Searching in Mass Spectrometric Data Analysis'*
  Supervised by Prof. Henry Lam, Dept. of CBE, HKUST
  We proposed a new similarity measure on MS2 (tandem mass spectrometry) data - cosine similarity of random pairs (CS-RP). This method reduces time cost of retention time alignment by SWATH or other DIA-MS2 data, also validating RT alignments with MS1-based method.
- **Undergraduate Final Year Project** *'Digitizing Receipts'*
  Supervised by Prof. Albert Chung, Dept. of CSE, HKUST
  An Android application was built for converting receipts from shops to digital format like XML. Optical Character Recognition(OCR) library – Tesseract is employed in this App. Our App is also able to convert multiple receipts in one image.

Publications

- **R.Y.C. Li**, N.J.W. Chin, Y.X. Wang, R.H.Y. So. 'Automatic Instance-edge Detection Network (AID-Net) - Vertebral Edge Detection by Deep Learning' European Society for Clinical Investigation Congress (ESCI Congress) 2019, Coimbra, Portugal, May 2019.
- **Y. C. Li**, L. Wu, H. Lam. 'Fast Similarity Measure of SWATH-MS by Cosine Similarity of Random Pairs(CS-RP).' Oral Presented at Asia Oceania Mass Spectrometry Conference (AOMSC) 2017, Biopolis, Singapore, Dec 2017.
- L. Wu, **Y. C. Li**, H. Lam. 'An efficient and accurate feature-based label-free quantification software tool for SWATH MS data.' 15th Human Proteome Organization World Congress, (HUPO 2016), Taipei, China, Sep 2016

Awards

- **Young Scientist Travel Award, Asia Oceania Mass Spectrometry Conference 2017** — **Singapore**
  'Fast Similarity Measure of SWATH-MS by Cosine Similarity of Random Pairs(CS-RP).' — *Dec 2017*
- **Dean of Engineering Scholarship, HKUST** — **Hong Kong**
  Student with good result in Hong Kong Diploma of Secondary Education (HKDSE). — *Sep 2013*

Working Experience

- **IELM 2100E, HKUST** — **Hong Kong**
  Graduate Teaching Assistant — *Feb 2018–May 2018*
- **Department of Computer Science and Engineering, HKUST** — **Hong Kong**
  Student Helper — *Aug 2016–Aug 2017*
- **Institute of Emerging Market Studies, HKUST** — **Hong Kong**
  Student Helper — *Sep 2015–Aug 2017*
- **COMP 1022P, HKUST** — **Hong Kong**
  Student Helper of Class and Laboratory — *Jul 2016*
- **Hong Kong Telecommunication Limited** — **Hong Kong**
  Summer Internship — *Jun 2015–Aug 2015*
- **Pigeon City Creative Computer Centre** — **Hong Kong**
  Part-time Tutor — *Feb 2015–May 2015*
- **SkyWare Technologies Limited** — **Hong Kong**
  Technical Support — *May 2013–Aug 2013*

Skills

- **Programming Languages:**
  Proficient in: Python (Numpy, OpenCV, PyTorch, Scikit-learn etc.), MATLAB
  Intermediate: C++, C
  Basic: CUDA, Java, Javascript, HTML, R
- **Language:** Cantonese, English, Putonghua (intermediate)