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Xono2L: an eXtensible, LabVIEW-compatible real-time sONOgraphic data capture and processing TOOL

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Software

- Review
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Summary

Research in advanced sonographic real-time clinical imaging methods such as ultrasonic needle tracking (Mung, Vignon, & Jain, 2011; Nikolov & Jensen, 2008; Xia et al., 2018, 2016; Xiaoyu Guo, 2014) is facilitated by the LabVIEW rapid system-design and development environment. This research and associated clinical translational developments (Xia et al., n.d., 2017a, 2017b) involve the capture and processing of live ultrasound data streams with LabVIEW.

Existing open-source software packages such as Plus (Lasso et al., 2014) and NifTK (Clarkson et al., 2015) support the capture of live ultrasound streams; however, they do not provide a LabVIEW interface. To bridge this gap, we have designed and developed Xono2L as a LabVIEW-compatible, extensible C++ API. Xono2L links with the Ulterius library, a component of the proprietary Sonix SDK provided for use with Sonix ultrasound systems commercialised initially by Ultrasonix Medical Corp. and currently by BK Medical Holding Company, Inc.

Xono2L is intended as an extensible tool that allows for the real-time capture of ultrasound imaging data, which in turn facilitates processing with LabVIEW. Although Xono2L's scope is currently limited to Sonix ultrasound systems, we have made it available to the research community to facilitate research with these devices. Xono2L's API is flexible and can be extended to cover a broad range of use cases.

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