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| **PhD Proposal Defense Presentation**  **Department of Electrical and Computer Engineering**  **1:00 PM – 2:00 PM, Wednesday, August 5, 2020**  **Zoom Video Conference** | |
| **Improved Segmentation for Automated Seizure Detection using Channel-Dependent Posteriors**  **Vinit Shah** Committee: Dr. Joseph Picone, Dept. ECE (Chair)  Dr. Iyad Obeid, Dept. of ECE  Dr. Yimin Zhang, Dept. of ECE  Dr. Pallavi Chitturi, Dept. of Statistics  Dr. Mercedes Jacobson, Neurology Dept.  **Abstract:**  The Electroencephalogram (EEG) is the primary tool used for the diagnosis of a variety of neural pathologies such as epilepsy. Identification of a critical event, such as an epileptic seizure, is difficult because the signals are corrupted by noise due to the way they are transduced. Precise segmentation, defined as the ability to detect start and stop times within a fraction of a second, is a challenging research problem. In this study, we improve seizure segmentation performance by mimicking the human interpretation process.  The central thesis of this work is that separation of the seizure detection problem into a two-phase problem – epileptiform activity detection followed by seizure detection – should improve our ability to detect and localize seizure events.  The multiphase model was evaluated on a blind evaluation set and was shown to detect segment boundaries within a -second margin of error. Our previous best system, which delivers state-of-the-art performance on this task, correctly detected only 9 segment boundaries. Our multiphase system was also shown to be robust by performing well on two blind evaluation sets.  Improving seizure detection performance through better segmentation is an important step forward in making automated seizure detection systems clinically acceptable. | **Zoom Details**  **Join Zoom Meeting:**  https://temple.zoom.us/j/97420719865  **Meeting ID: 974 2071 9865**  **One tap mobile:**  [+19292056099](tel:+19292056099),,97420719865# US [+13017158592](tel:+13017158592),,97420719865# US  **Dial by your location:**  [+1 929 205 6099](tel:+1%20929%20205%206099) US (New York)  [+1 301 715 8592](tel:+1%20301%20715%208592) US (Germantown)  [+1 312 626 6799](tel:+1%20312%20626%206799) US (Chicago)  [+1 669 900 6833](tel:+1%20669%20900%206833) US (San Jose)  [+1 253 215 8782](tel:+1%20253%20215%208782) US (Tacoma)  [+1 346 248 7799](tel:+1%20346%20248%207799) US (Houston)  **Find your local number:**  https://temple.zoom.us/u/abK5fVLnMA  **Join by SIP:**  [97420719865@zoomcrc.com](mailto:97420719865@zoomcrc.com)  **Join by H.323:**  162.255.37.11 (US West)  162.255.36.11 (US East)  115.114.131.7 (India Mumbai)  115.114.115.7 (India Hyderabad)  213.19.144.110 (EMEA)  103.122.166.55 (Australia)  64.211.144.160 (Brazil)  69.174.57.160 (Canada)  207.226.132.110 (Japan)  **Join by Skype for Business:**  https://temple.zoom.us/skype/97420719865 |
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