Enhancement of US-CT registration accuracy for spinal surgery

• **Motivation:** Enhancing bone boundary of the vertebra in US images could improve the registration accuracy of US-CT data

• **Methods:**
  - Created locally-weighted SLSC (LW-SLSC)
  - LW-SLSC uses minimization of total variance regularized over a moving kernel
  - Quantified CT / US similarity with gradient correlation metric

• **Results:** Similar performance registration between DAS, SLSC and LW-SLSC. SLSC and LW-SLSC features better contrast at bone edges.

**Member:** Eduardo Gonzalez
**Mentor:** Muyinatu A. Lediju Bell

Group ID: 20