	Proposed	Ambiguities	Implementation
Pre-processing	• Trim non-breech face impression regions • Remove dropouts & outliers • Apply band-pass Gaussian regression filter	• Trimming performed manually – processed data not publicly available • How are “outliers” defined? • How to “remove” dropouts? • Regression filter implicit parameters not specified	• RANSAC + Hough Transform + crop exterior NA rows/columns isolates BF impression region • Gaussian band-pass filter implemented
Comparison	Calculate translation value at which each cell/region pair attains the maximum CCF value for each rotation considered	• How is CCF calculated – from definition or by CC Theorem? • How are processed surface matrices all of same dimension? • Which algorithm is used to rotate matrices?	• CC Theorem used to determine translation alignment values • Pairwise-complete correlation calculated after aligning • Matrices rotated via nearest-neighbor interpolation
Top Vote	• Determine consensus-based reference values among estimated translation/rotation alignment values • Count number of cell/region pairs with estimated alignment values within some distance of reference values and max CCF greater than some threshold	• Why median for both translation and rotation reference values? Mean or mode feasible alternatives? • How to determine effective thresholds other than experimentation?	• Reference value function can be set separately for translation and rotation values. Default is median, but using mode for rotation reference value has seen some promise. • Thresholds currently decided by experimentation.
High CMC	• Perform comparison procedure in both directions • Build CMC-θ distributions by counting congruent cell/region pairs for each θ value • Identify if CMC-θ distribution attains a mode using High CMC criterion • If mode is identified, count CMCs in and around mode. Otherwise, defer to Top Vote method CMCs.	• What if CMC-θ mode is wider than one θ value (i.e., consecutive θ values tie for the maximum CMC count)? • What if a CMC-θ mode is only identified in one direction?	• If CMC-θ mode is wider than than one θ value, then the median of these θ values is used as the actual modal θ value • Different user-specified options exist to handle cases in which a CMC-θ is identified in one direction