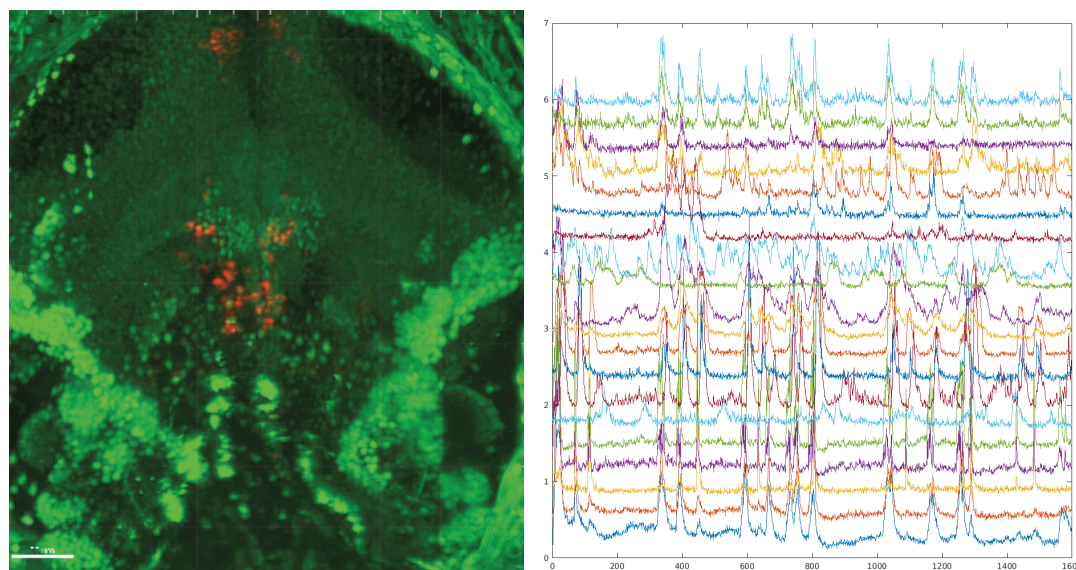
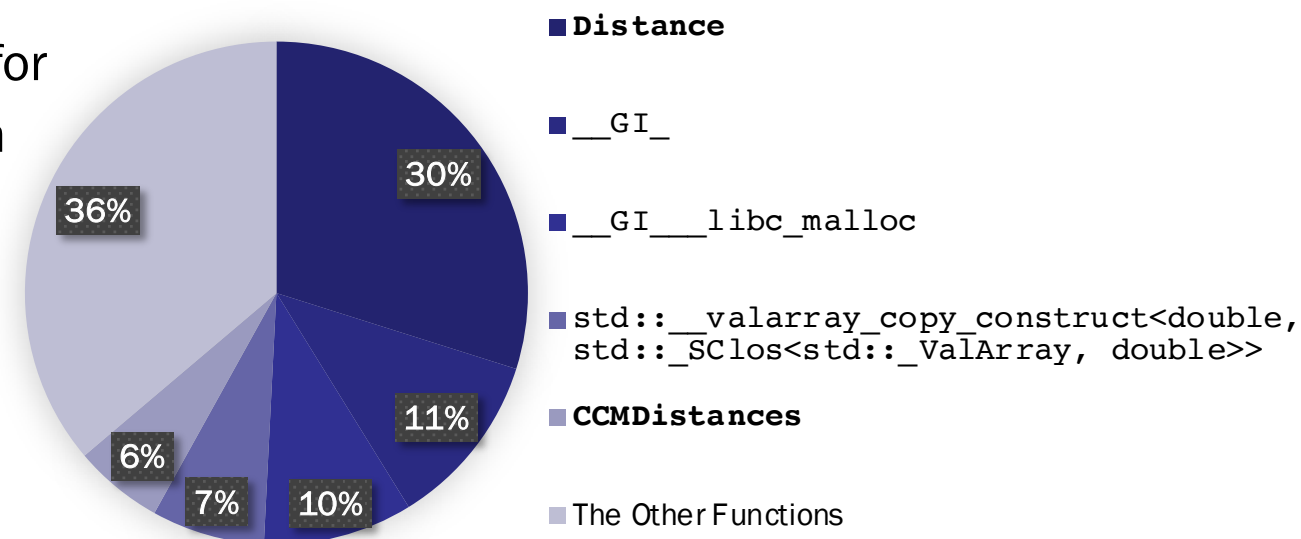


Calculation of Complete Zebrafish Brain Neural Activities on ABCI

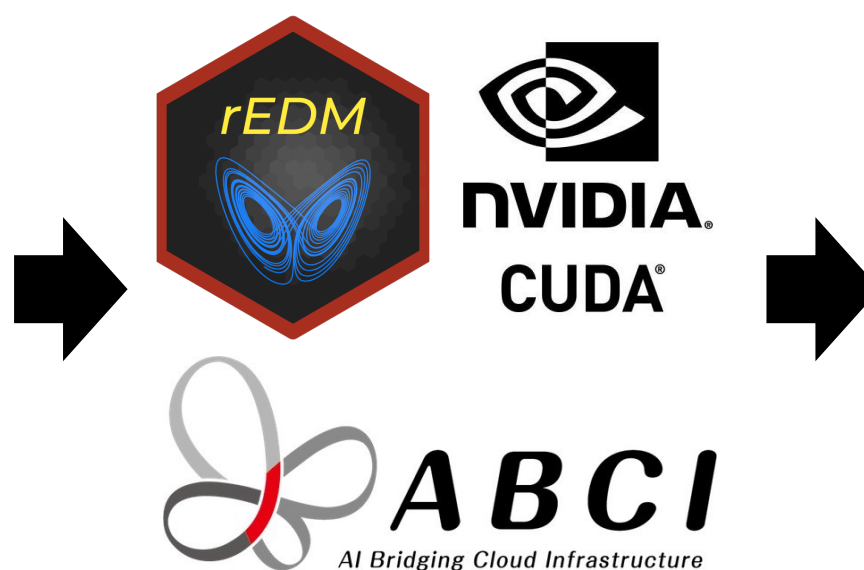
Wassapon Watanakesuntorn, Kohei Ichikawa, Keichi Takahashi, Jason Haga, Gerald Pao

- “Zebrafish Neural Activity Maps for Novel Neuromorphic Deep Learning Architectures” from UCSD
 - Collects and analyzes Zebrafish neural activity for use with Convergent Cross Mapping (CCM) from Empirical Dynamical Modeling (EDM)
 - Find the relationships within the neural activity network of the Zebrafish brain
 - Uses EDM library for CCM calculation on ABCI
- CUDA enabling and optimizing EDM library for ABCI

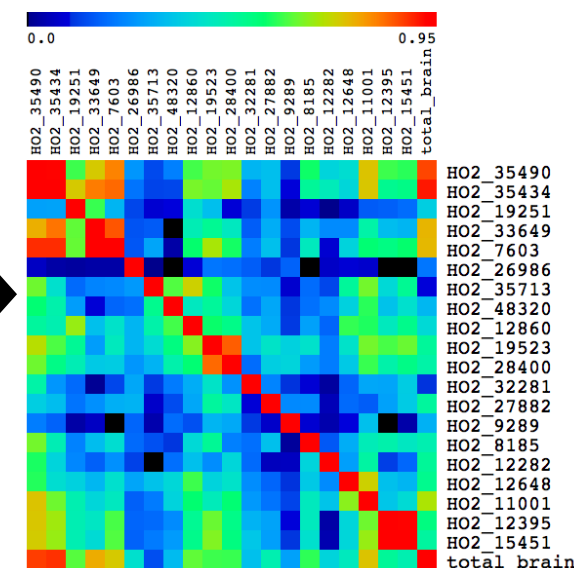
Breakdown of CPU Time (cppEDM)



Zebrafish Neural Activity
(Data size up to Petabytes)



Calculate CCM on ABCI



Causal Relationships
Determined by CCM