

Propositions accompanying the thesis

The symphony of cacophony

Understanding the order in neurodegenerative diseases

by Vikram Venkatraghavan

1. Discriminative Event Based Modeling (DEBM) is a robust way to estimate disease progression timelines in neurodegenerative diseases in the presence of disease heterogeneity. [This thesis]
2. Disease stage, as measured by a patient's position along the disease progression timeline constructed using DEBM, has diagnostic and prognostic value in Alzheimer's disease. [This thesis]
3. The disease progression timeline of structural brain abnormalities derived from Alzheimer's disease research cohorts using DEBM is generalizable to clinical as well as population based cohorts. [This thesis]
4. *APOE-ε2* carriers, homozygous *APOE-ε3* carriers, and *APOE-ε4* carriers have significantly different disease progression timelines in Alzheimer's disease. [This thesis]
5. Subject-specific variations in the disease progression timeline obtained by DEBM, assist in *ante-mortem* identification of molecular subtypes of the sporadic Creutzfeldt-Jakob disease. [This thesis]
6. Transparency and explainability are essential for clinical use of data-driven support systems for multidisciplinary dementia diagnosis.
7. One must start from an unmet clinical need and work backwards to find a solution in terms of an elegant mathematical formulation, and not vice versa. [Inspired by Steve Jobs]
8. In the era of 'alternative facts', freedom of speech should not translate to freedom of reach on social media.
9. No one can whistle a symphony, it takes a whole orchestra to play it. Likewise, multidisciplinary collaborations are the need of the hour for combating dementia. [Inspired by Halford Luccock]
10. Idealism and pragmatism are the yin and yang of research. It is essential for them to co-exist to make substantial progress in any field. [Inspired by Paul David Hewson]
11. Do not go gentle into that good night. Rage, rage against the dying of the light. [Dylan Thomas]