Earthquake Monitoring in Artificial Intelligence Era, *Mostafa Mousavi*
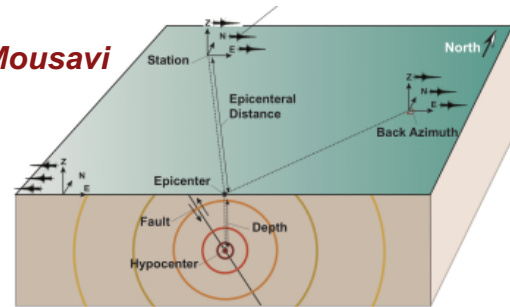
Recorded Ground Motions

Earthquake Catalog
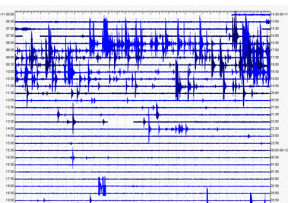
Denoising
Mousavi and Langston (2016), BSSA
Mousavi and Langston (2017), Geophysics
Zhu et al (2019), IEEE-TGRS.

Discrimination
Mousavi et al. (2016), GJI.
Mousavi et al. (2019), IEEE-GRSL.

Polarity Determination
Mousavi et al. (2019), IEEE-GRSL.

Earthquake Location
Mousavi and Beroza (2020), IEEE-TGRS.

Detection
Mousavi et. al., (2016), SEG
Mousavi et al. (2018), Sci. Rep.
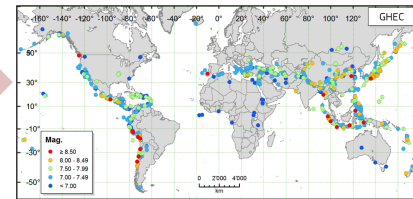Mousavi et al. (2020), Nat. Commun.

Phase Picking
Mousavi et. al., (2016), Geophysics
Zhu and Beroza, (2019), GJI
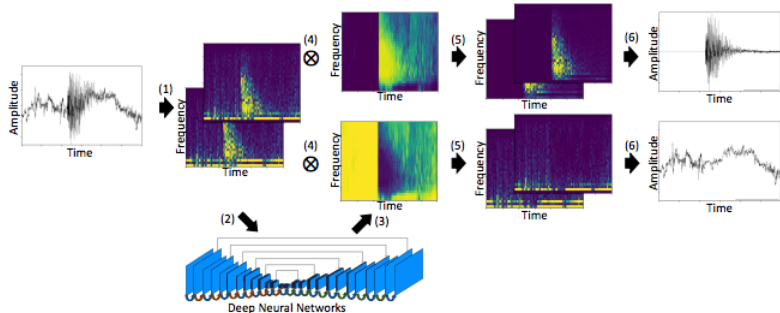Mousavi et al. (2020), Nat. Commun.

Phase Association

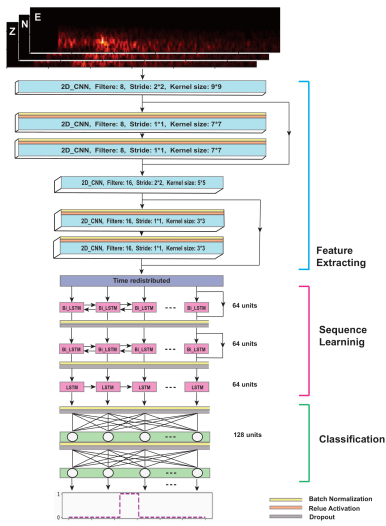**Magnitude Estimation**
Mousavi and Beroza (2020), GRL

mmousavi@stanford.edu

Dnoising (DeepDenoiser)

Zhu, Mousavi, & Beroza, (2018), IEEE-TGRS.

Event Discrimination & Polarity Determination

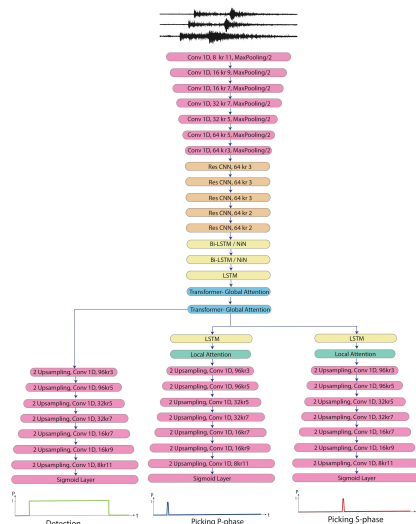*Mousavi, Zhu, Ellsworth & Beroza, (2019), IEEE-GRSL.*

Detection (CRED)

Mousavi, Zhu, Sheng & Beroza, (2018), Scientific Report

Detection & Picking (EQTransformer)
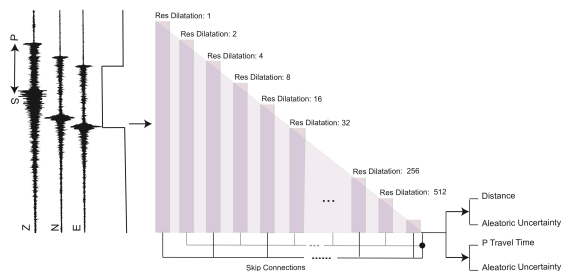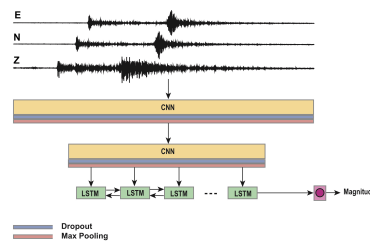
Mousavi et al, (2020), Nature Communication
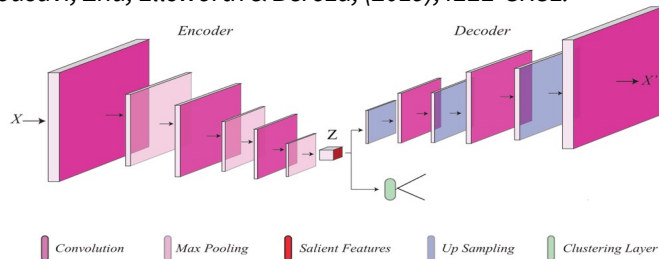
Single-Station Location

Mousavi & Beroza, (2020), IEEE-TGRS.

Magnitude Estimation (MagNet)

Mousavi & Beroza, (2019), GRL.

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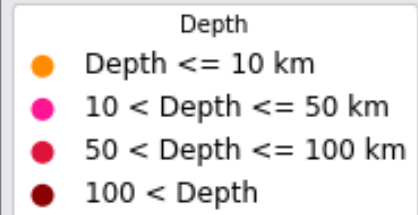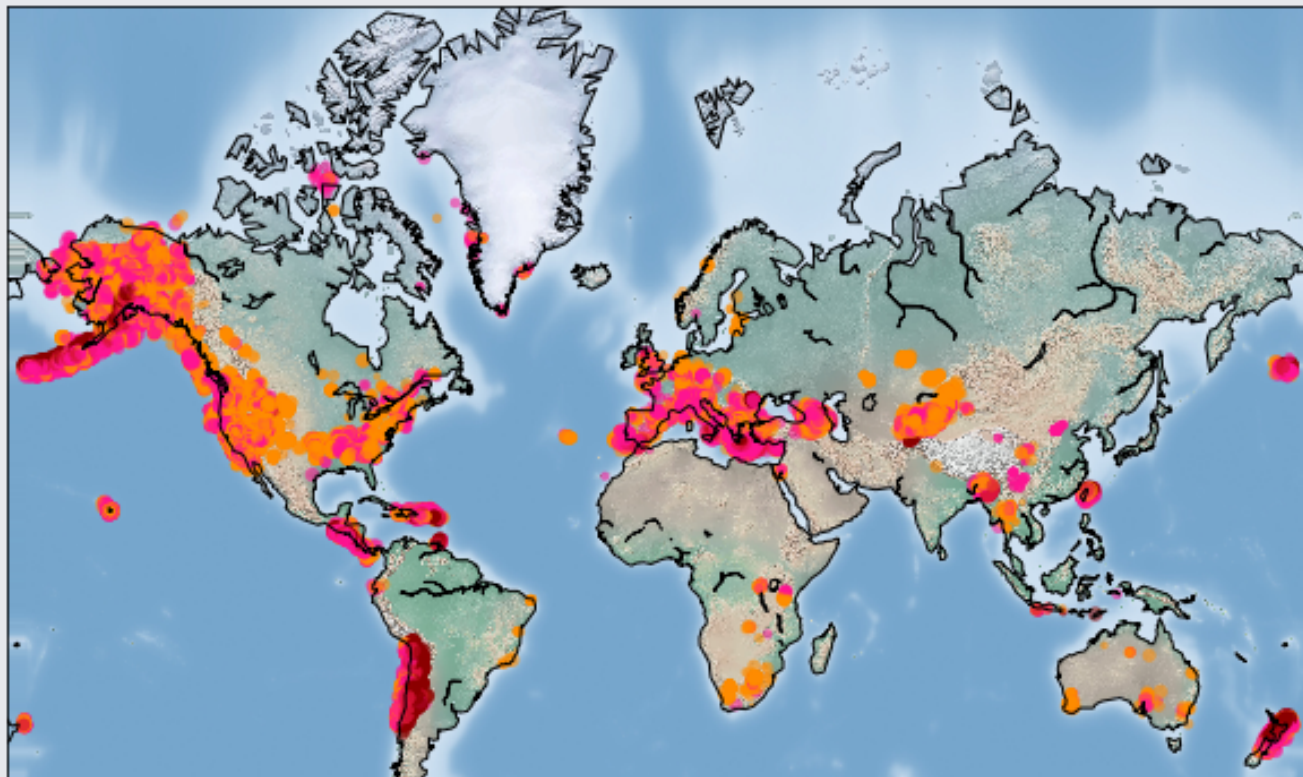
STanford EArthquake Dataset (STEAD)

Mousavi et al, (2019), IEEE-Access.

1.3 M Labeled Waveform.   **450 k** Earthquakes.   **19,000** Hours of Data.   **2613** Stations.

GitHub

smousavi05

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