

Pulmonary Embolism Detection with Dual-Energy CT Data Augmentation

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Pulmonary Embolus (PE)

- Blockage of an artery in the lungs
- Dead space → poor oxygenation



➡ Early detection decreases lethality rate from 30% to 2%

CTA Scan

- Injection of contrast agent
- Defined protocols for image acquisition



➡ Contrast variation of different CT scans

Data Sets

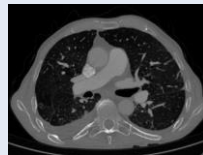
FUMPE, CADPE

Single-Energy CT Data



Conventional

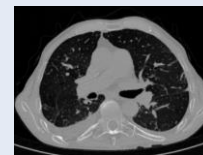
Dual-Energy CT Data



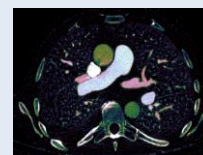
Conventional



MonoE50



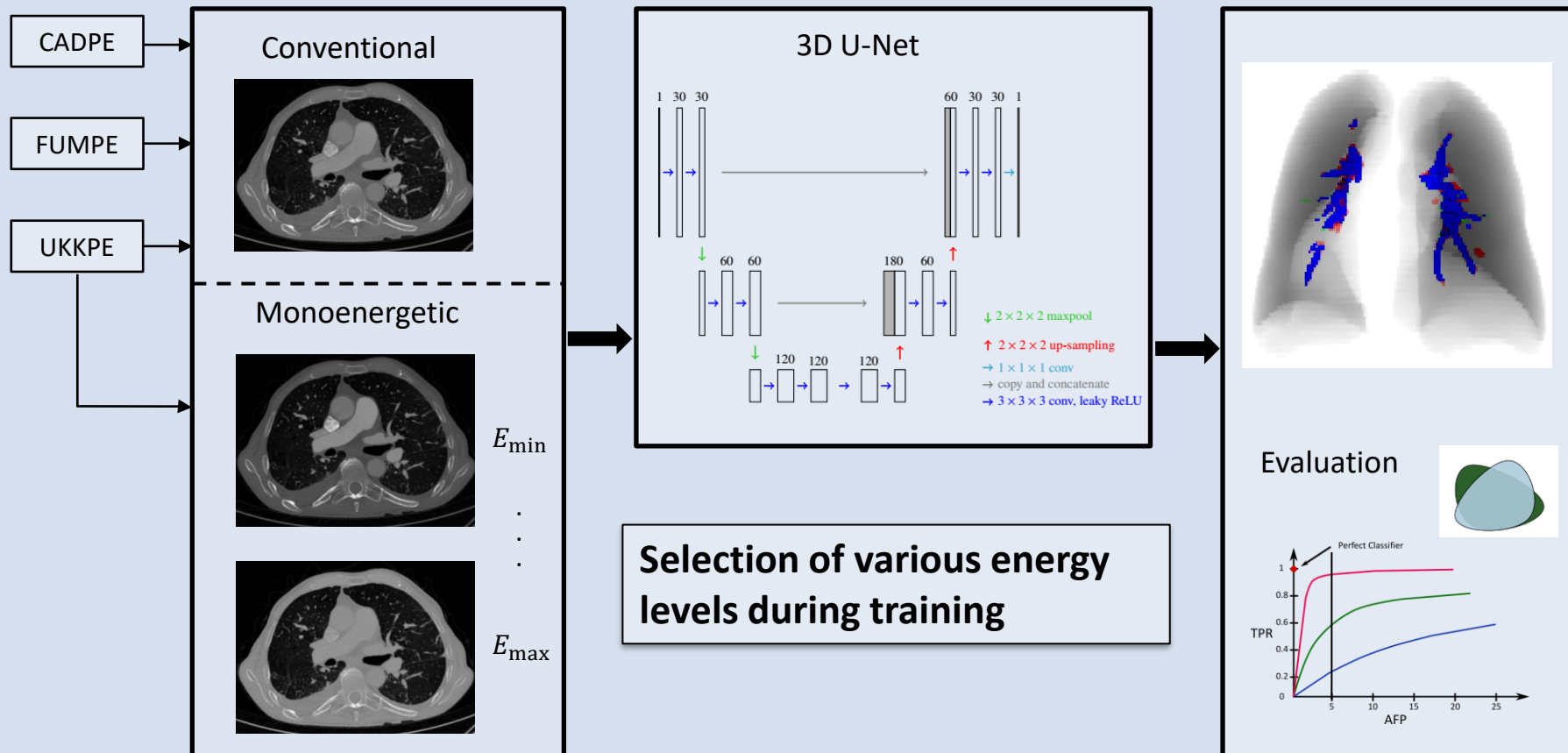
MonoE150



Iodine

UKKPE

Methods



Results

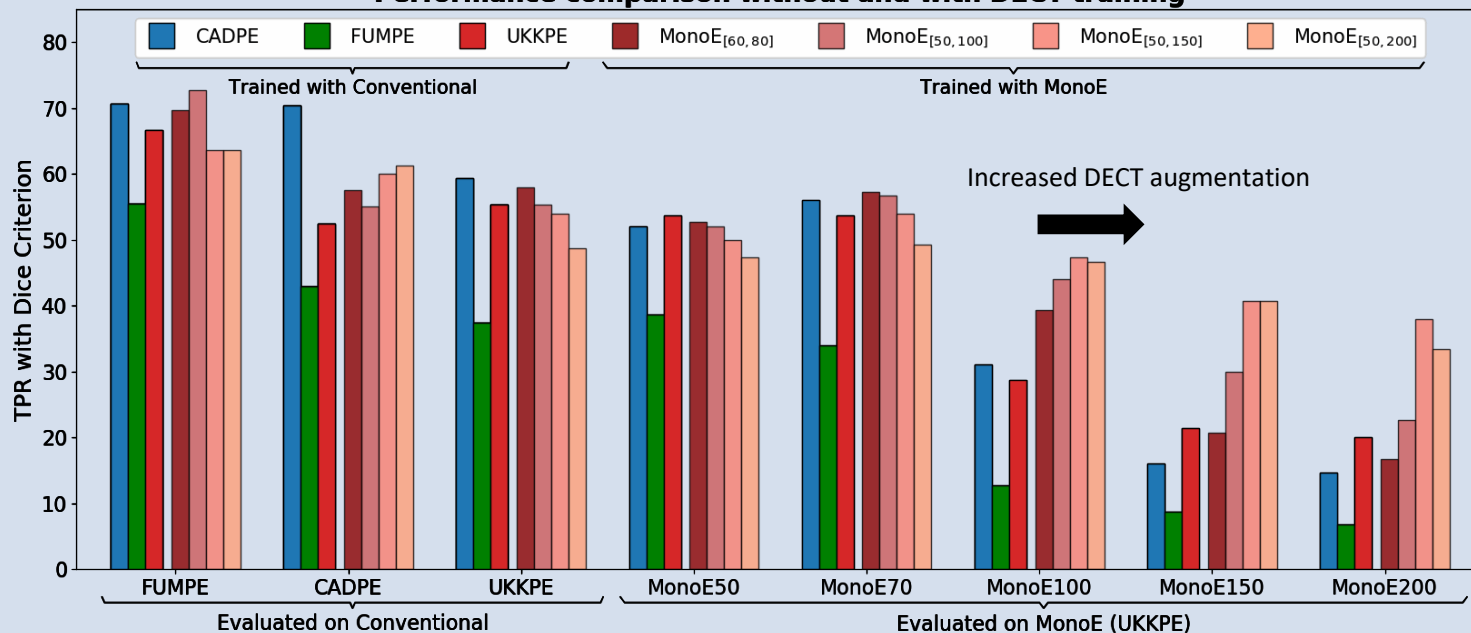


DECT Augmentation

- Increases performance on conventional images
- Leads to more robust networks against contrast variations



Performance comparison without and with DECT training



Conventional



50keV



70keV



150keV



