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# CS7CS4 Machine Learning

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## Part 2 – Outline

- Introduction to Convolutional Networks
  - Convolution and de-convolution (connected with the time-series lecture)
  - Convolutional layer
  - Convolutional Network (connected with NNet lecture)
  - ConvNet Architectures
  - Applications
- Introduction to Transformers and LLMs
  - Text-features (connected with time-series lecture)
  - Transformers
  - Attention mechanism
  - Decoder-only transformers
  - Fine-tuning
- Convolution and time-series analysis
  - Revisiting convolution in the case of time-series
  - Implementing de-convolution with multivariate lagged regression
  - Case study: combining LLM and lagged regression to study brain data

