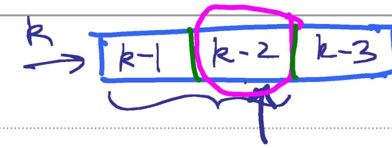
Note Title 09-11-2020

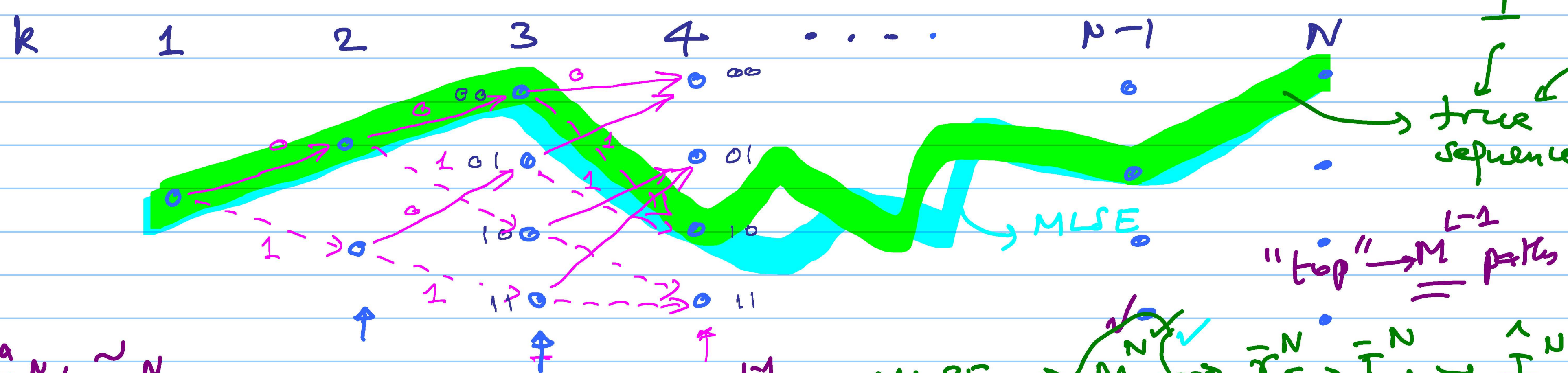
EE4140 -- Lecture #23 Nov. 13, 2020



$$r(k) = \sum_{l=0}^{2} f_l\, I(k-l) + v(k)$$

$L-1 = 2$
$M = 2$

$2^2 = 4$ nodes ← 4 paths



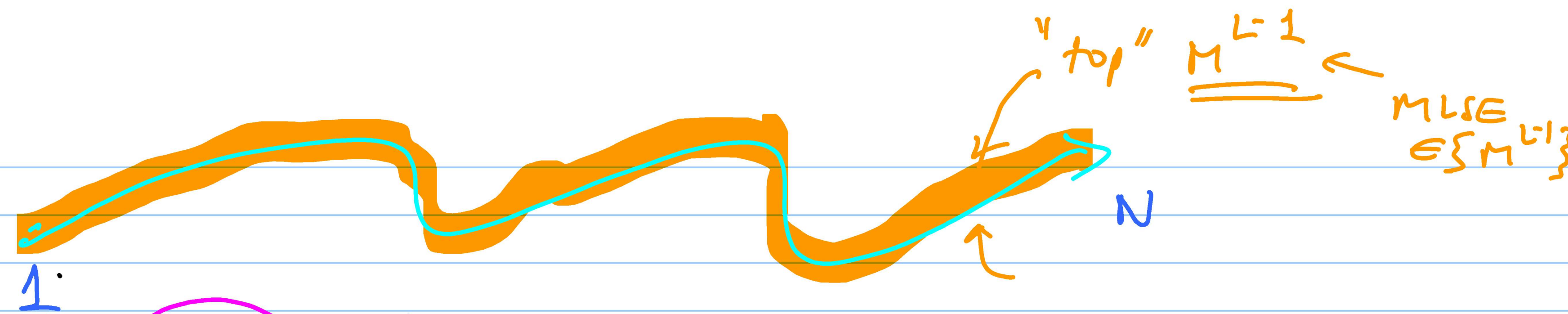
$\tilde{I}^N$

"top" → M^{L-1} paths

$\hat{I}^N \neq \tilde{I}^N$

$N \times M^{L-1} \ll M^N$

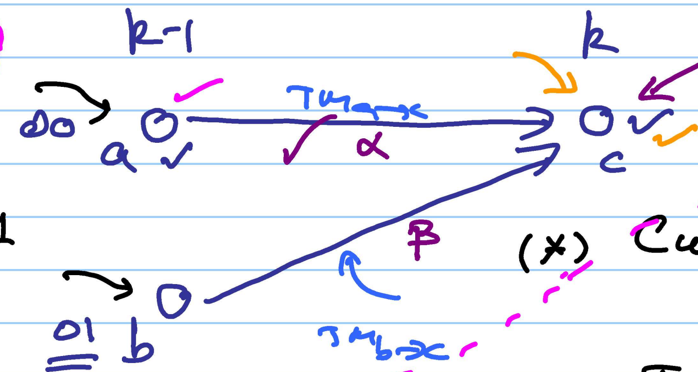
MLSE → M^N ($i = 1$ to) → $\bar{r}^N \leftrightarrow \bar{I}_i^N \to \hat{I}^N$ ← MLSE



survivor sequence I_a^{k-1}

I_b^{k-1}

$[I(1) \ldots I(k-1) \,!\, I(k)]$



$CM_c(k) =$

(*) Cumulative Metric $CM_a(k-1)$, $CM_b(k-1)$,

(*) Transition Metric $k-1 \to k$ $TM_{a\to c}(k)$, $TM_{b\to c}(k)$,

Compute @ time k

$CM_a(k-1) + TM_{a\to c}(k)$ α : $CM_b(k-1) + TM_{b\to c}(k)$ β

$\alpha < \beta$

$L=5$

$$I(k) \rightarrow \boxed{} \rightarrow \oplus \rightarrow r(k)$$

$$TM_{a\to c}(k) = \left(r(k) - r_{a\to c}(k)\right)^2$$

$n = 16$

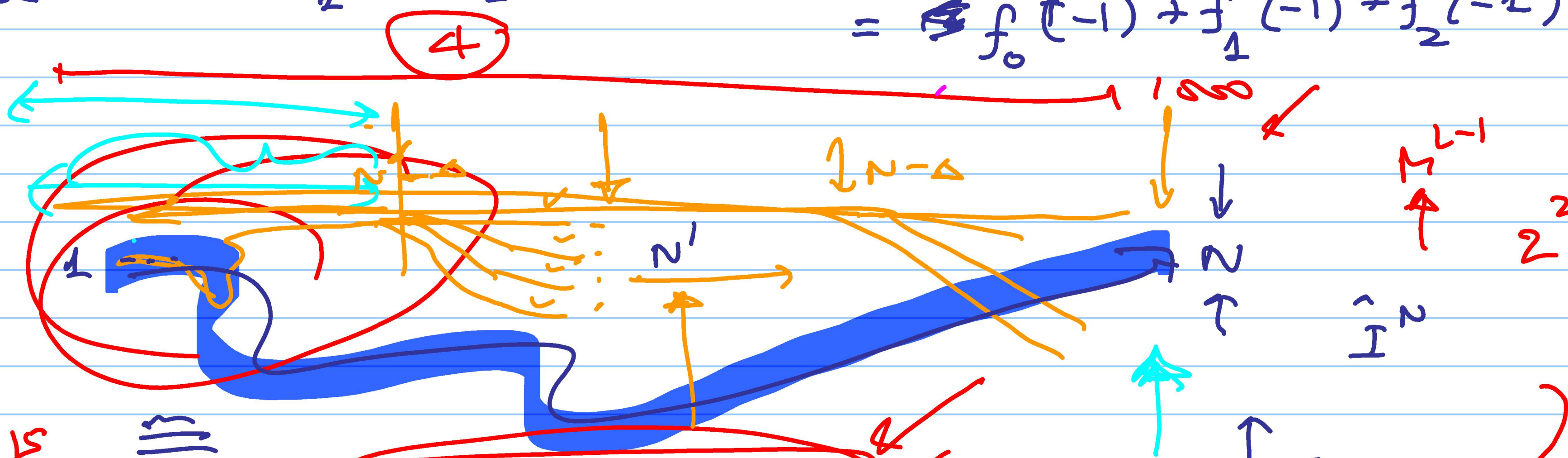
5^1

$16 = 16^4$

$$r_{b\to c}(k) = f_0(-1) + f_1(-1) + f_2(+1)$$

$$r_{c\to x}(k) = \sum_{l=0}^{3} f_l \, \hat{I}_{a\to c}(k-l)$$

$$= f_0(-1) + f_1(-1) + f_2(-1)$$



$L = 3$

$5 \times 3 = 15$

$k \rightarrow (k-15)$

$L \rightarrow 151$

$\Delta \approx 4L$ or $5L$

$k \rightarrow (k-\Delta)$

Tx $\bigcirc \longrightarrow \bigcirc$ Rx

finite-delay decoding.

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