**Algorithm 1** Exhaustive RFID-data cleaning algorithm.

**Require:** a $d$-sequence $D = R_1, \cdots R_T$, a map $M$, the object maximum speed $v_{\max}$.
**Ensure:** a p-trajectory $p_1, \cdots, p_T$.
*Forward phase:*
$C(1) = \mathit{Cells}(R_1)$
**for all** $c \in C(1)$ **do**
    $p_1^{\text{fw}}(c) = \frac{1}{|C(1)|}$
**for** $t = 2$ to $T$ **do**
    $C(t) = \{c \mid c \in \mathit{Cells}(R_t) \wedge \exists c' \in C(t-1) \text{ s.t. } \frac{d_{\min}(c',c)}{\Delta} \leq v_{\max}\}$
    **for all** $c \in C(t)$ **do**
        $p_t^{\text{fw}}(c) = \sum_{c' \in C(t-1)} p_{t-1}^{\text{fw}}(c') \cdot p^{\text{mov}}(v \geq \frac{d_{\min}(c',c)}{\Delta})$
*Backward phase:*
**for** $t = T$ downTo 1 **do**
    **for all** $c \in C(t)$ **do**
        **if** $t = T$ **then**
            $p_T^{\text{bw}}(c) = \frac{1}{|C(T)|}$
        **else**
            $p_t^{\text{bw}}(c) = \sum_{c' \in C(t+1)} p_{t+1}^{\text{bw}}(c') \cdot p^{\text{mov}}(v \geq \frac{d_{\min}(c,c')}{\Delta})$
        **if** $p_t^{\text{bw}}(c) = 0$ **then**
            $C(t) = C(t) \setminus \{c\}$
        **else**
            $p_t(c) = p_t^{\text{fw}}(c) \cdot p_t^{\text{bw}}(c) \cdot h(R_t|c)$
Project $p_1, \cdots, p_T$ on $\mathcal{L}$ and normalize
**return** $p_1, \cdots, p_T$