Formale Übersetzungsmodelle

Task 4 (correctness of proof and definition by structural induction)

Show that the principle of proof and definition by structural induction is correct (e.g. by means of known concepts from universal algebra).

Task 5 (generalized sequential machines and bu-tt)

Let $G = (Q, \Sigma, \Delta, q_0, F, R)$ be a gsm. Give bu-tts that simulate the run of G

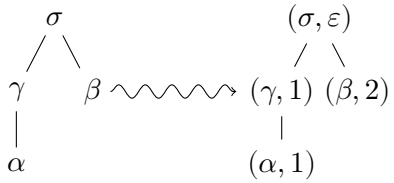
(a) on the nodes of monadic trees from front to root.

(b) on the front of trees from left to right.

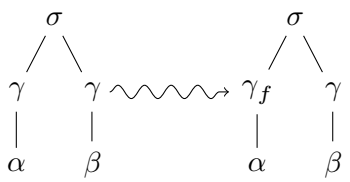
Task 6 (relabeling and checking)

(a) Give a bu-tt M_1 that, for every tree $\xi \in T_\Sigma$, enhances for every position $w \in \mathrm{pos}(\xi)$ the label at w with the last digit of w.

(b) Let $\gamma \in \Sigma$. Give a bu-tt M_2 that, for every tree $\xi \in T_\Sigma$, replaces the first occurrence (according to depth-first order) of γ in ξ by γ_f without changing the rest of ξ.



(a) transformation $\tau(M_1)$



(b) transformation $\tau(M_2)$