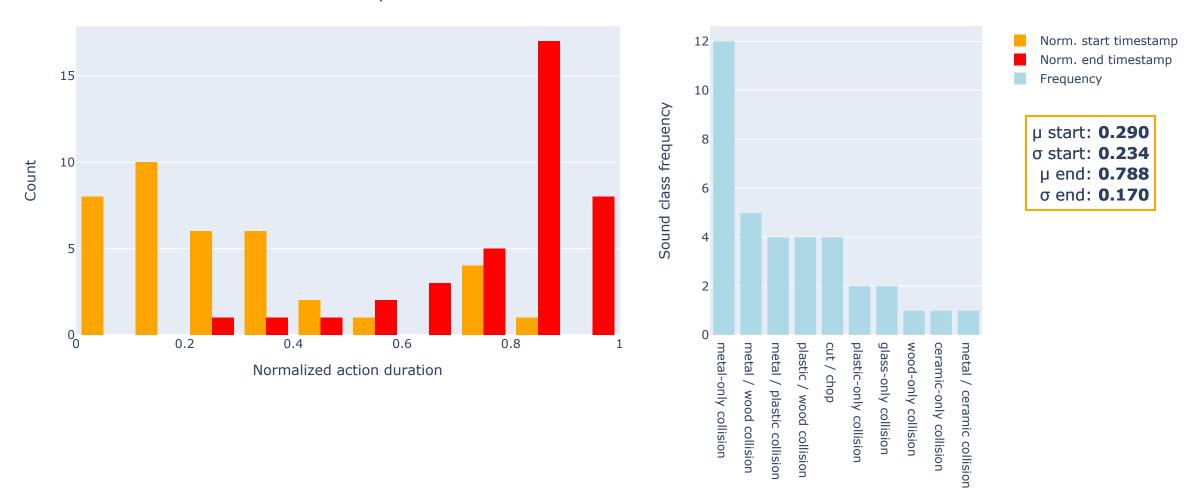Alignment of sound annotations with action annotation **pat** in EPIC-KITCHENS (**n=38**) with **1 strict** sound annotation overlap

Left chart — X-axis: Normalized action duration; Y-axis: Count. Legend: Norm. start timestamp (orange), Norm. end timestamp (red).

Right chart — X-axis: Sound annotation classes; Y-axis: Sound class frequency. Legend: Frequency (light blue).

Sound annotation classes: metal-only collision, metal / wood collision, metal / plastic collision, plastic / wood collision, cut / chop, plastic-only collision, glass-only collision, wood-only collision, ceramic-only collision, metal / ceramic collision.

μ start: **0.290**
σ start: **0.234**
μ end: **0.788**
σ end: **0.170**