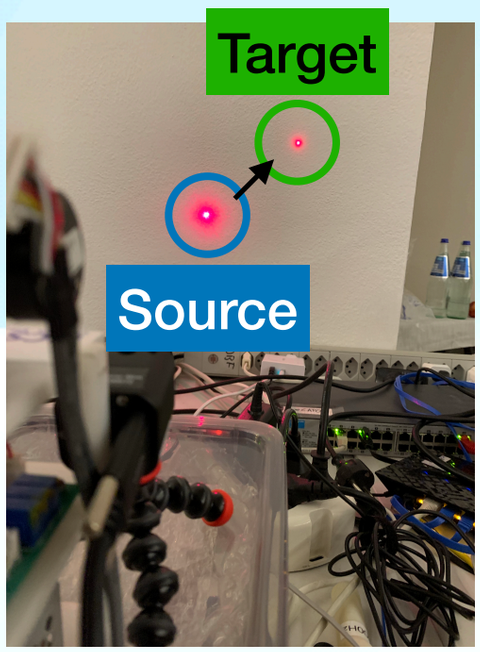
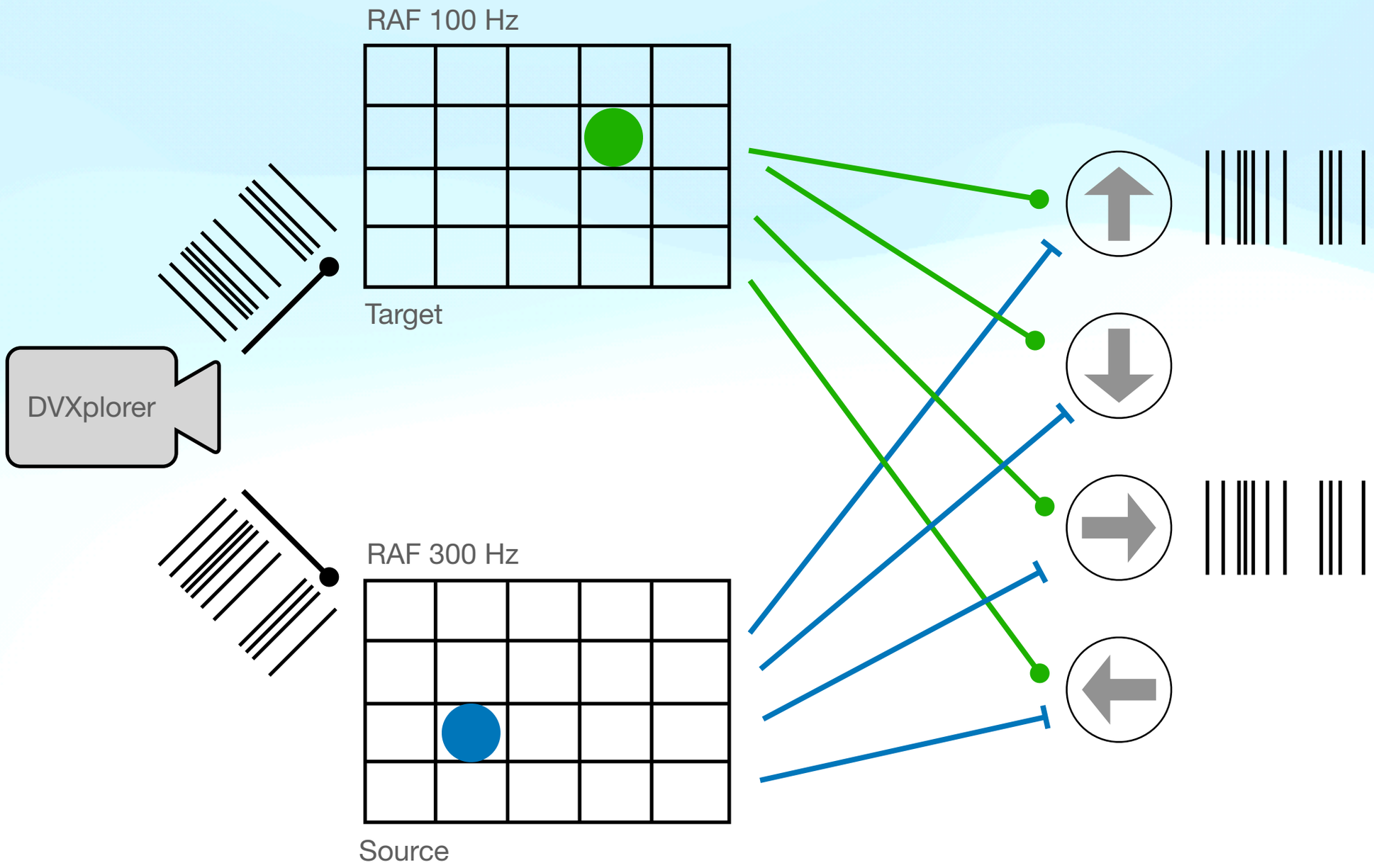
Laser tracking with end-to-end SNN

Alvaro, Jules, Luca, Thomas





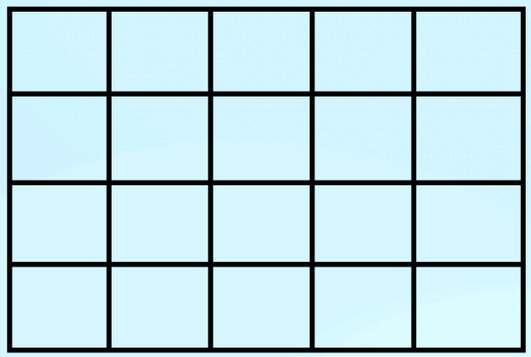
GeNN

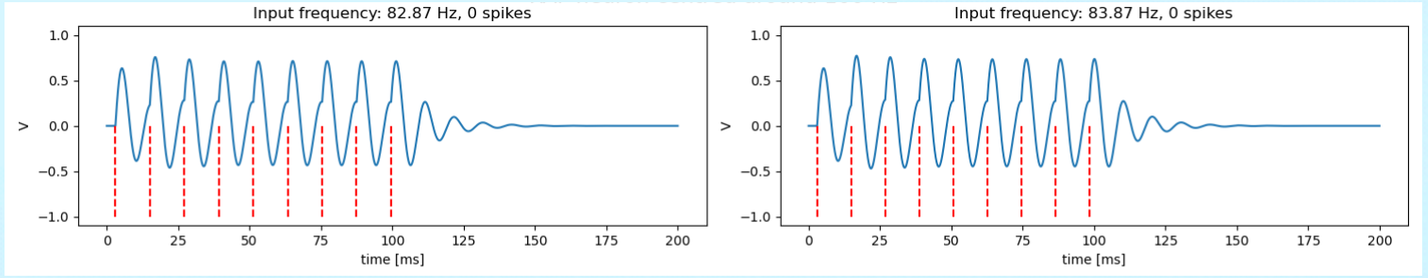
RAF encoding

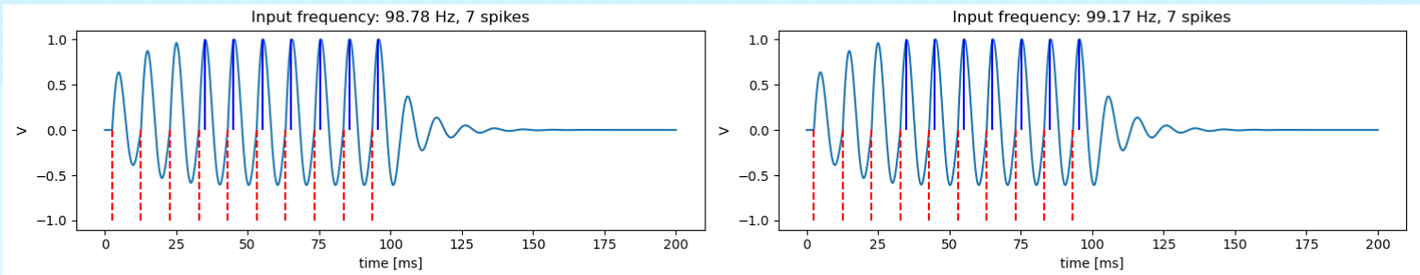
Resonate-and-fire neurons

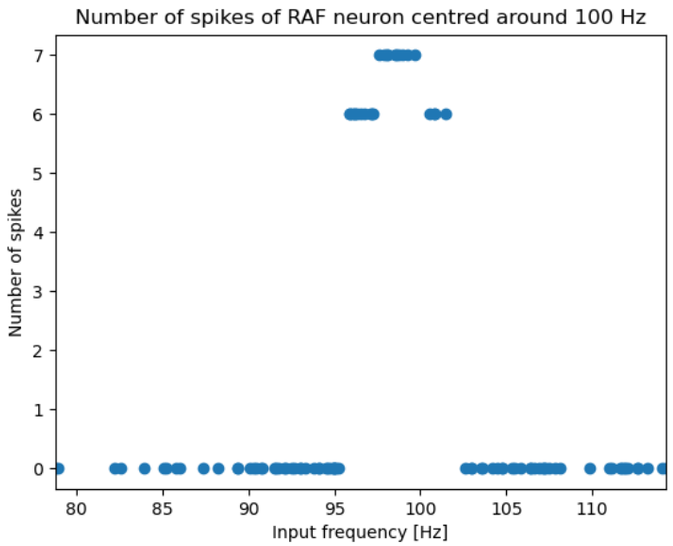
Eugene M. Izhikevich

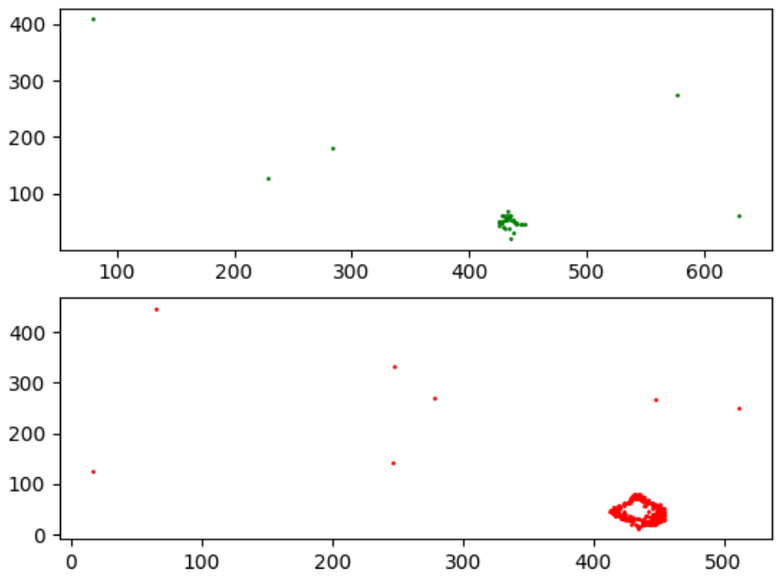
RAF xx Hz

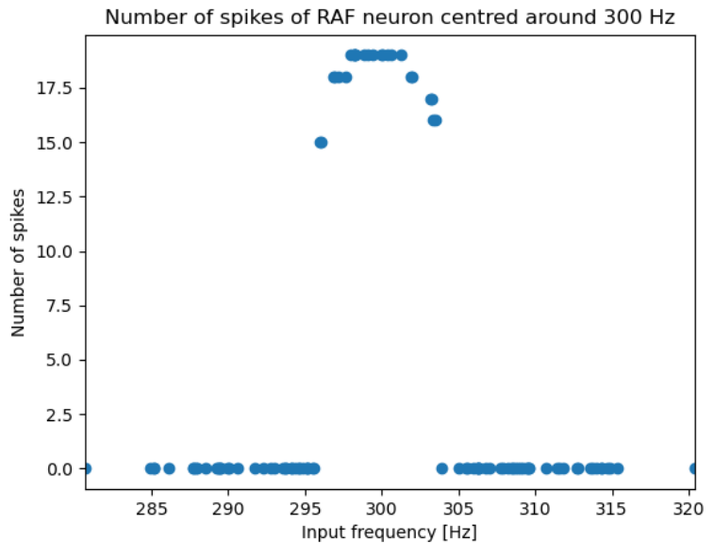






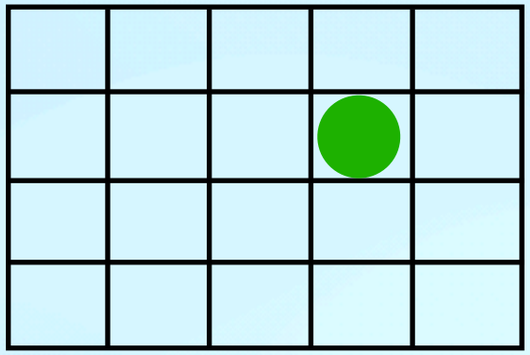






Command encoding

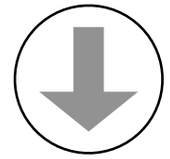
RAF 100 Hz

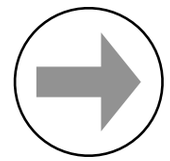


Target

1.0	1.0	…	1.0	1.0
…	…	…	0.8	…
…	…	…	…	…
0.1	0.1	…	0.1	0.1

w = 0.8 - 0.3 = 0.5

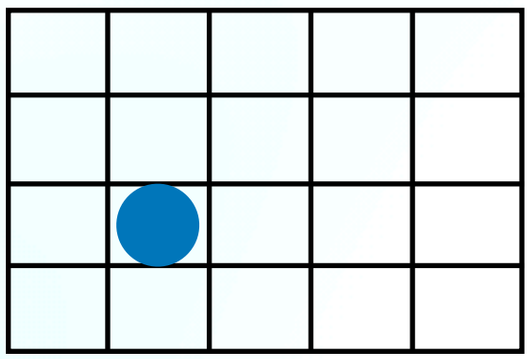




-1 x

1.0	1.0	…	1.0	1.0
…	…	…	…	…
…	0.3	…	…	…
0.1	0.1	…	0.1	0.1

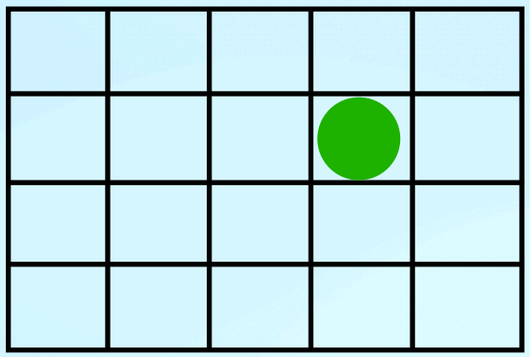
RAF 300 Hz



Source

Command encoding

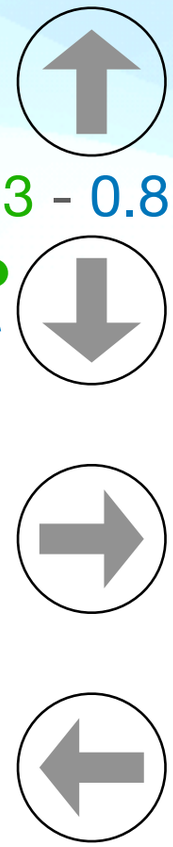
RAF 100 Hz



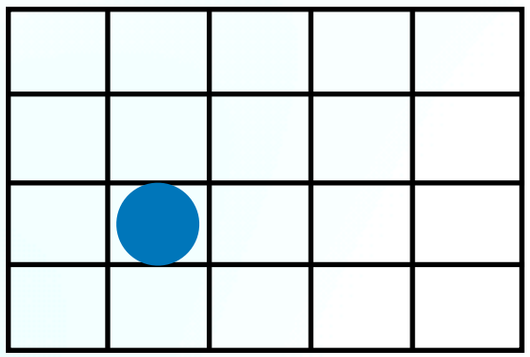
Target

0.1	0.1	…	0.1	0.1
…	…	…	0.3	…
…	…	…	…	…
1.0	1.0	…	1.0	1.0

w = 0.3 - 0.8 = -0.5



RAF 300 Hz



Source

-1 x

0.1	0.1	…	0.1	0.1
…	…	…	…	…
…	0.8	…	…	…
1.0	1.0	…	1.0	1.0