Bill of Materials — Human Follow Ackermann Crawler

A. Electronics

Item	Part Name	Description / Specs	Qty	Supplier / Part No.	Notes
E1	Teensy 4.1	600 MHz ARM Cortex-M7 MCU, 55 I/O pins	1	PJRC	Main controller (Layer 1–3)
E2	Jetson Orin Nano 8GB Dev Kit	1024-core GPU, 8GB RAM, AI compute	1	NVIDIA	Vision & AI processing
E3	Motor Driver – BTS7960	43 A high-power H-bridge	2	Amazon / eBay	Front & rear drive
E4	Motor Driver – BTS7980	55 A high-power H-bridge	1	Amazon / eBay	Steering control
E5	PiNSIGHT / DepthAI Camera	USB AI camera module	1	ArduCam	Runs MobileNet-SSD
E6	Rotary Alignment Sensor PCB	3-channel contact encoder	1	Salvaged from old RC car	Integrated in steering rack; provides left/mid/right analog feedback
E7	LiPo Battery	3S 11.1 V 8000 mAh	2	Turnigy	Main power supply
E8	Buck Converter (Logic)	DC-DC step-down, 12 V→5 V, 5 A	1	Pololu	Teensy + sensors
E9	Buck Converter (Jetson)	DC-DC step-down, 12 V→5 V, 8 A	1	Pololu	Jetson power
E10	DC Gear Motor	12 V, ~50–100 rpm, high-torque	4	Salvaged from old RC car	Original drive motors from donor RC car
E11	Wiring Harness	18–22 AWG silicone wire	As req.	Amazon	Power & signal wiring
E12	Connectors	XT60, Dupont, JST	As req.	Amazon	Power & signal connectors

B. Mechanical / 3D Printed

Item	Part Name	Material / Specs	Qty	Supplier / Part No.	Notes
M1	Chassis Base	PLA+, 100% infill	1	Custom	See Base.step
M2	Main Lid	PLA+, 100% infill	1	Custom	See Main_Lid.step
M3	Battery Lid	PLA+, 100% infill	1	Custom	See Battery_Lid.step

C. Hardware / Fasteners

Item	Part Name	Size / Specs	Qty	Supplier / Part No.	Notes
H1	Hex Bolt	M3 × 8 mm	~20	Local supplier	Stainless steel
H2	Hex Bolt	M3 × 12 mm	~10	Local supplier	Stainless steel
H3	Hex Nut	M3	~30	Local supplier	Stainless steel
H4	Washer	M3	~30	Local supplier	Stainless steel
H5	Cable Tie	Nylon, 100 mm	As req.	Amazon	Cable management